

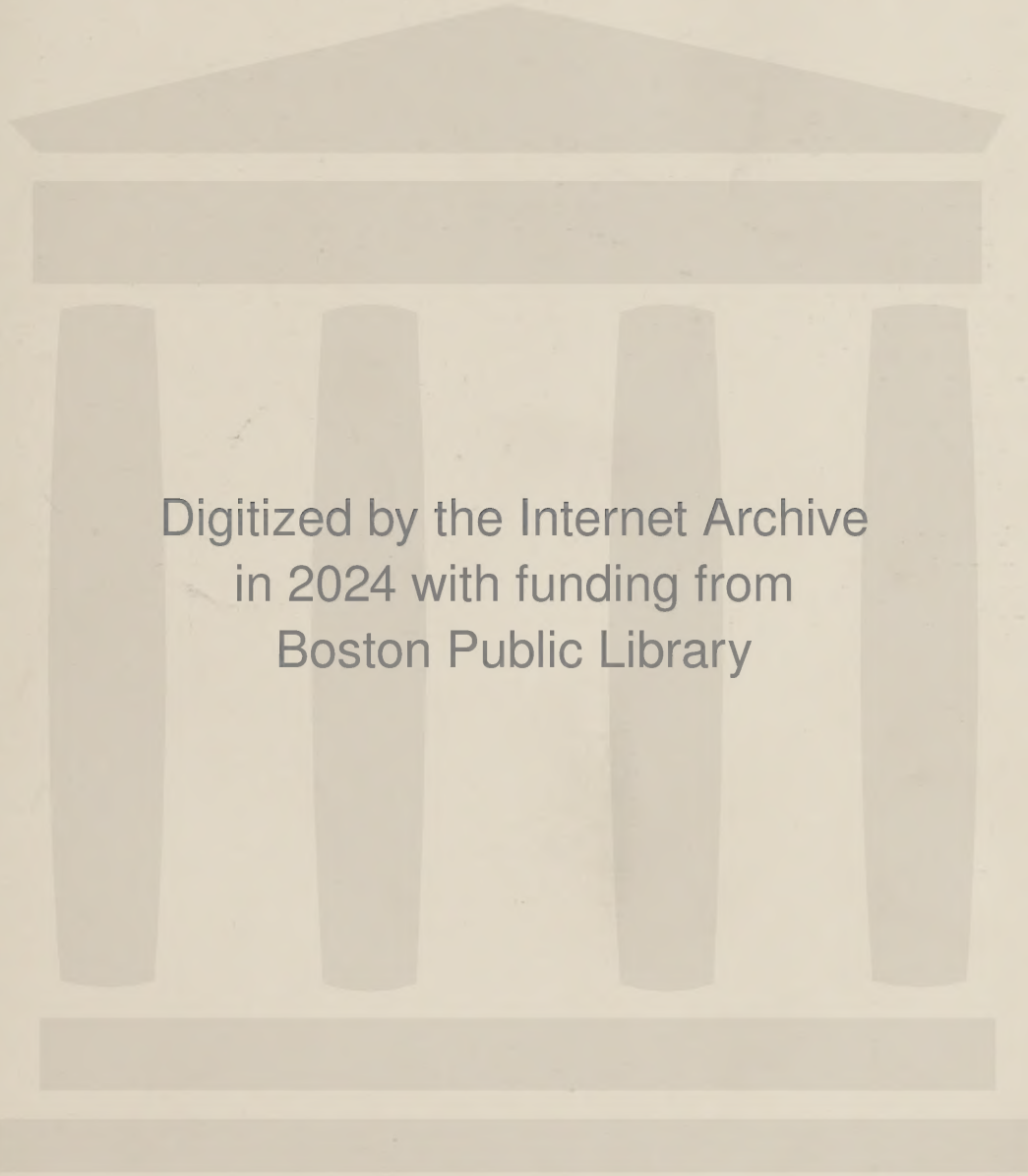
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Detail of the facade of Saint Peter's, Rome, built by Carlo Maderna in 1606 when the original plan was abandoned and the nave lengthened.

From an etching by Louis C. Rosenberg

THE ARCHITECTURAL FORUM

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Harington House in Gloucestershire

By ROGER WEARNE RAMSDALL AND HAROLD DONALDSON EBERLEIN

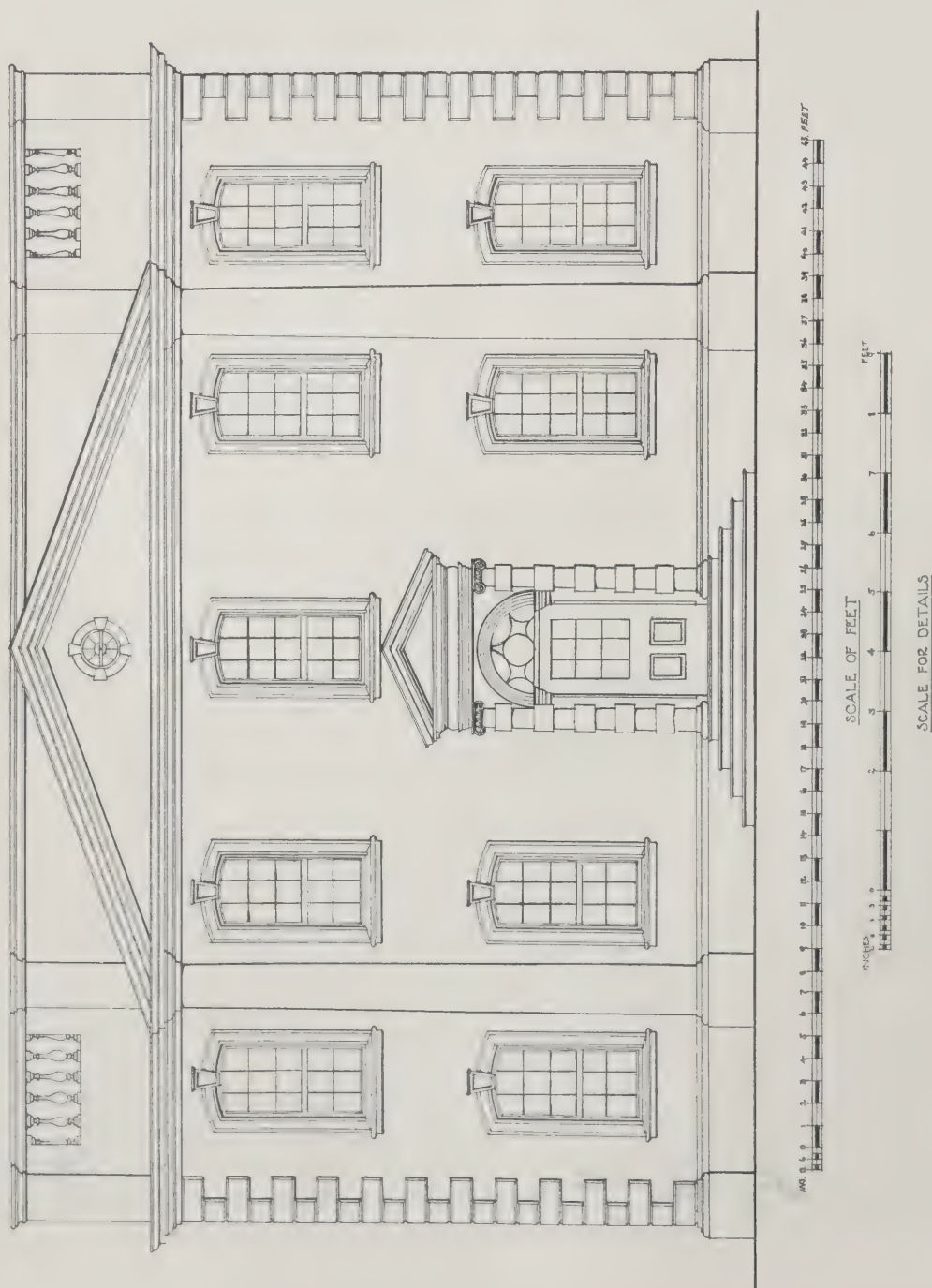
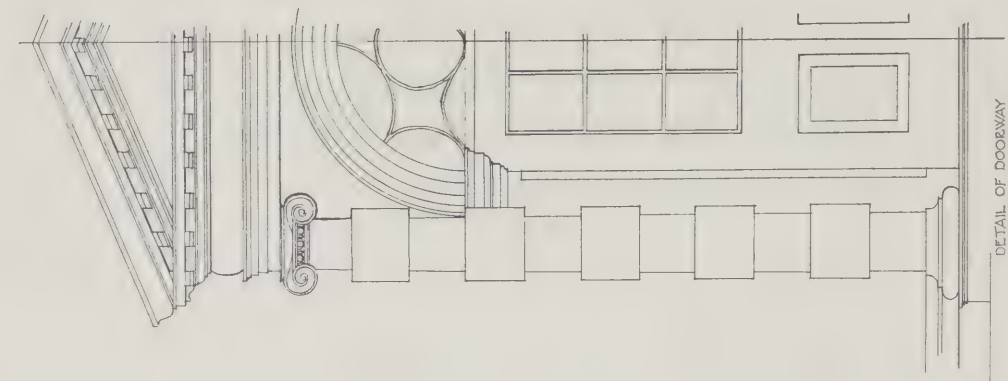
THE English architects of the early eighteenth century had preëminently the gift of making the most of their opportunities and of the resources at their command. They could design houses of moderate size in the "grand manner," and in so doing they could manage to invest them with presence and dignity tenfold greater than a structure of like size is commonly wont to present nowadays. They had a fine conception of broad and ample scale, and this scale they applied even to small buildings with exceptionally happy results. They were near enough to the days of the seventeenth century grand manner for the vigorous traditions of that spacious period still to have a potent influence upon the creations they designed. Furthermore, they were not beset by the popular obsession of later days for a multitude of partitions dividing most of

the satisfactory spaces into an absurd number of small rooms which people thought they wanted, and which were dignified with special and high-sounding names, but which they did not really need and did not use when they had them. Consequently, it was often possible to invest even the most unpretentious structures with comely bearing and poise in a peculiarly distinguished and gratifying manner.

Harington House, at Bourton-on-the-Water, in Gloucestershire, is a case in point, where a structure of no great extent conveys an impression of amplitude beyond what might ordinarily be expected, perhaps beyond its actual dimensions. It is just this quality more than anything else that makes it a subject particularly deserving of close analytical study. The heights of the stories and the character of the details employed account for a great deal of the gen-



The Garden Facade of Harington House



eral effect produced, to be sure, but there are other relationships of proportion and sundry subtleties that merit careful examination. Besides this, there are certain individual peculiarities of detail about Harington House that lead us to the conclusion that either it was designed by an architect who had not fully steeped himself in all the nice precisions of the Georgian manner as it was then interpreted, or else that the artisans employed now and again took liberties in the matter of execution of the designs furnished by an architect at a distance. These little peculiarities are in the nature of refreshing whimsicalities rather than indications of "cultured amateurishness." At any rate, they add to the sum total of charm, and there will be occasion to allude to them later on during the course of this discussion.

What probably happened was the latter of the two seeming possibilities. The plans were presumably sent down from London by an architect of recognized position and accomplishments, and were then carried out by some competent local master builder who, however, could not resist the temptation to exercise the latitude of judgment to which such men were accustomed; perhaps here and there he put in a touch of the Gothic vernacular which lingered longer in the Cotswolds than anywhere else. To find a stopped Gothic chamfer on the top quoin of a Classic dwelling, replete in most respects with all the studied urbanities of sophisticated scholarship, is like finding a rare woodland flower abloom in the midst of a border in a scrupulously groomed formal garden. As a matter of fact, if the foregoing

hypothesis of construction be correct, the drawings provided by the city architect doubtless left many minor details without specific indication,—this was often done at the time,—and the master builder executed them in the way he knew best. None of them appear impertinent or incongruous; they are merely evidences of engaging naïvete, committed in perfect good faith, with honest intent on the craftsman's part.

Harington House, taken in its entirety, is a fairly large dwelling, but the early Georgian part, under immediate consideration, is of only moderate size. The north wing was built in the seventeenth century and served as a sufficient domicile until sometime between 1730 and 1740, when the addition with which we are here concerned was made. Several years ago, when the house came into the hands of its present owner, the south wing was built in conformity with the style of the original structure. It was in many ways a fortunate thing that until the building of the new wing nothing whatever had been done to the house since 1801. Restorations, therefore, were altogether a matter of structural repairs.

One of the best things that came from leaving the house so long untouched was the preservation of the old wallpaper in the first floor hall, paper made by Jackson of Battersea and executed in his best manner. The paper was soiled and fairly in rags and tatters, but it was carefully removed from the walls, cleaned, repaired, mounted on a *chassis* and put back in its original position. Another interesting survival of original wallpaper occurred in the cupola, where the paper of eighteenth century Chinese origin re-



Entrance Facade from the Highroad, Harington House



Entrance to Service Wing, Harington House

mained in place, less distinguished, indeed, than the Jackson paper of the first floor and much marred by the accidents of time, but still worthy of the careful restoration accorded it. In still another respect, too, the abstention from nineteenth century changes at Harington House has been particularly fortunate. The plaster decorations are intact and present an epitome of English decorative plasterwork from the first half to almost the end of the eighteenth century.

An amusing bit of domestic history is connected with the plaster enrichment. The heiress who owned and occupied Harington House during a great part

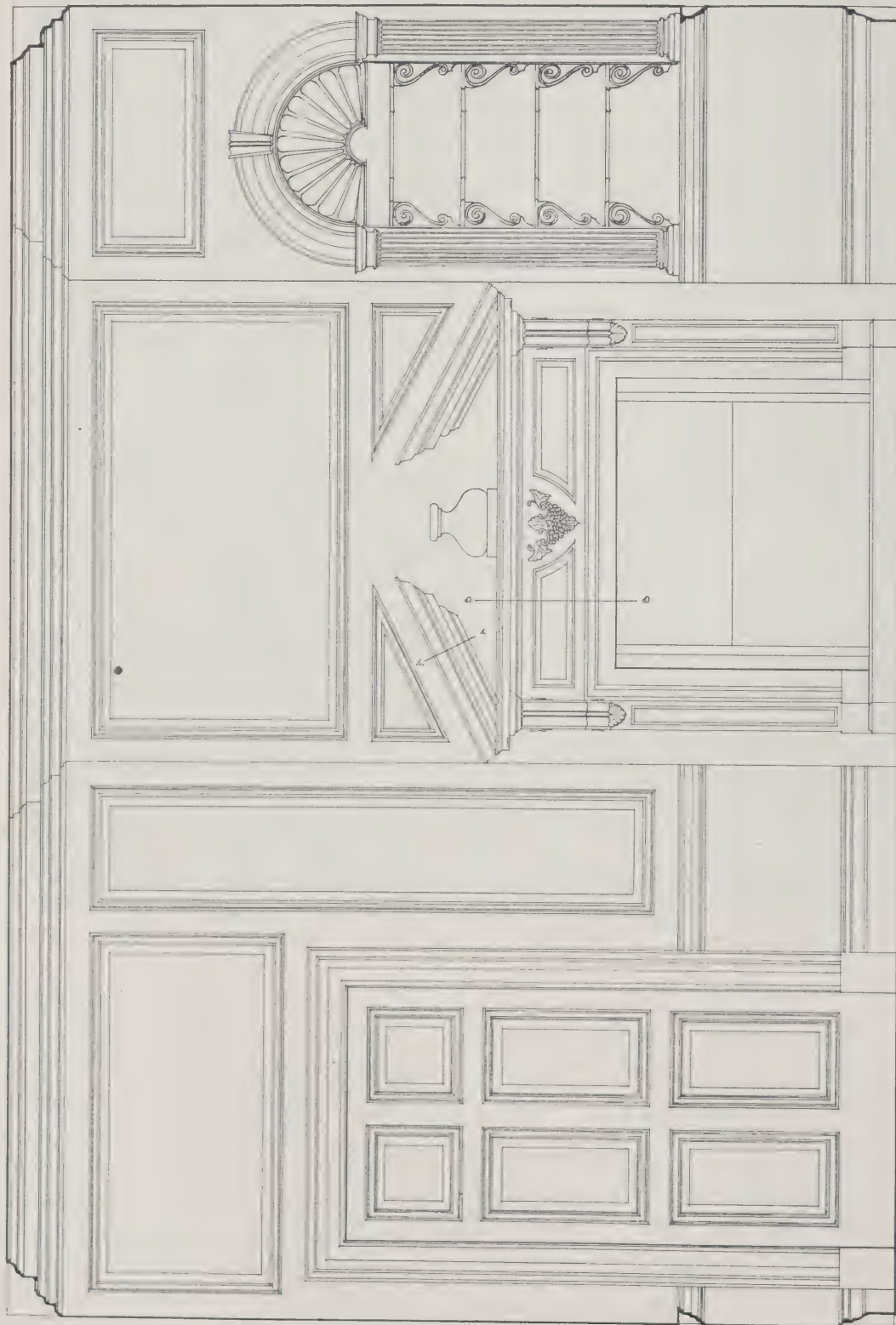
of the eighteenth century was not only long-lived but also much given to matrimony. She had three husbands, in due and proper succession, and the acquisition of each spouse seems to have inspired her to garnish her dwelling with whatever form of plaster ornament was then in vogue. There is the early work (characterized by vigorous motifs and virile rendering), reminiscent of the fashions that prevailed in Queen Anne's day and for some time thereafter; there is the efflorescence of the once esteemed Rococo, imported from across the Channel, and there are the meticulous refinements of the



Doorway and Palladian Window, Garden Facade, Harington House

ultra-Palladian school. Last of all, there are the foreshadowings of the sterner vein of Classic severity that was later to dominate design in the early part of the nineteenth century. Curiously enough, the successive plaster adornments are so juxtaposed that their general effect is not at all incongruous, despite their diversity of provenance and expression, and none but the most exacting purists could cavil at the unusual association of modes. What is especially significant is that each manner of plaster embellishment is presented not in its most elaborate form, such as the examples one ordinarily sees illus-

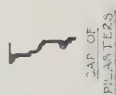
trated as typical of the several styles of historic interior decoration, but in a very moderate and unpretentious way, suitable for average domestic employment. In this connection it is worth noting that in the dining room, as in the corresponding room on the opposite side of the entrance hall, the field of the ceiling is colored a pale blue, against which the relief of the unobtrusive Rococo plaster decoration stands forth in effective contrast. The sunburst in the center of the ceiling of the first floor hall is gilded. Otherwise neither color nor gilding is used in conjunction with the plasterwork. With such



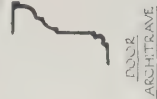
SECTION AT A.A.



SECTION AT B.B.
SHOWING CONSOLE



CAP OF
PILASTER



DOOR
ARCHITRAVE



MAIN
CORNICE



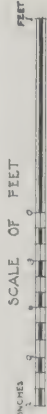
BASE
COURSE



CHAIR
RAIL



BASE OF
PILASTERS



SCALE OF FEET

SCALE FOR DETAILS



Fireplace in Study, Harington House

satisfactory instances of the use of plaster in view, the incentive to a fuller utilization of this resource in modern treatment gains new and increased force.

The staircase of Harington House is quite remarkable in that all the risers and treads, which are of oak, are inlaid with bounding lines of cross-banded walnut, yielding a diverting feature of contrast in both color and grain. The landings also are inlaid with bounding lines and small geometrical figures. This is one of those pleasant little individualities that are constantly coming to light in the course of examination. Another is the Chinese fret-

work balustrade of the little staircase ascending from the attic to the cupola. Besides the unusual inlay ornament of the steps and landings, the main staircase exhibits other items of interest that will repay close study. In fact, all the detail throughout the house may be scrutinized with profit. The niches in the master's study; the fireplace in the same room; the fireplace with a tinder hole, in the old wing; the chair rails; the paneling, all display marked individualities that offer a substantial reward to the discerning student with a mind to investigate them and explore the niceties which occur throughout the house.



Doorway from Hall into Study



Detail, Doorway in Hall



Chimneypiece in Dining Room

The exterior is of the native Cotswold limestone, of a warm, tawny hue, well calculated to enhance the distinguished aspect of the composition. It is likewise a thoroughly satisfactory medium for the execution of mouldings and such carved ornament as the pilaster capitals, the parapet balusters, and the vases that crown the parapet. The weather merely adds patches of black stain that intensify the shadows without disintegrating the stone or injuring it.

In scanning the west or entrance front of Harington House, one cannot help feeling that the architect, whoever he may have been, was familiar with and admired the work of Sir John Vanbrugh. The general treatment of the fenestration is strongly reminiscent of Vanbrugh's manner, and in other features of the composition, too, it is possible to detect details more or less suggestive of the same source of inspiration. Quite apart, however, from seeking to establish resemblances or to point out possible attributions, we may observe that the handling of the windows is highly agreeable and, in the course of analysis, besides taking account of their detail, spacing and scale, we must note the distinctive character imparted by the glazing, especially by the division of the sashes, the upper being only two lights in height. At the same time, the heavily banded architrave of the doorway contributes not a little to the air of robust stateliness that marks this facade. The east or garden front is more serene in its composition and equally engaging. Not the least



One End of New Drawing Room

part of its distinction is due to the design of the doorway with the so-called "Palladian" window above it which lights the staircase and its landings.

It is unfortunate that the notion seems to have taken root in the minds of a certain class of the laity that any form of domestic architectural composition in the Classic manner must needs be a more or less perfunctory performance, to be compassed by observing divers cut and dried conventions, and that little wholesome variety of result is to be expected. To judge from sundry examples of modern building, it would seem that some of the architectural profession share this unworthy conception of the Classic manner as a thing blighted by standardization.

As a matter of fact, throughout the length and breadth of England, in country towns and in quiet villages, as well as in those parts of cities whose decorous eighteenth century aspect has not been marred by the encroaching tide of modern commercialism, there are to be found hundreds of houses of medium size, cast in the Classic mould, all of them eloquently preaching the same message. That message proclaims the vigorous vitality and infinite diversity of the Classic tradition. This vital diversity is quite evident enough to satisfy the most curious and insatiable in the matter of detail. There are scores of little local mannerisms, and very diverting mannerisms too, to be met with only in certain counties or parts of certain counties. As an instance of this sort of



Palladian Window on Stair Landing

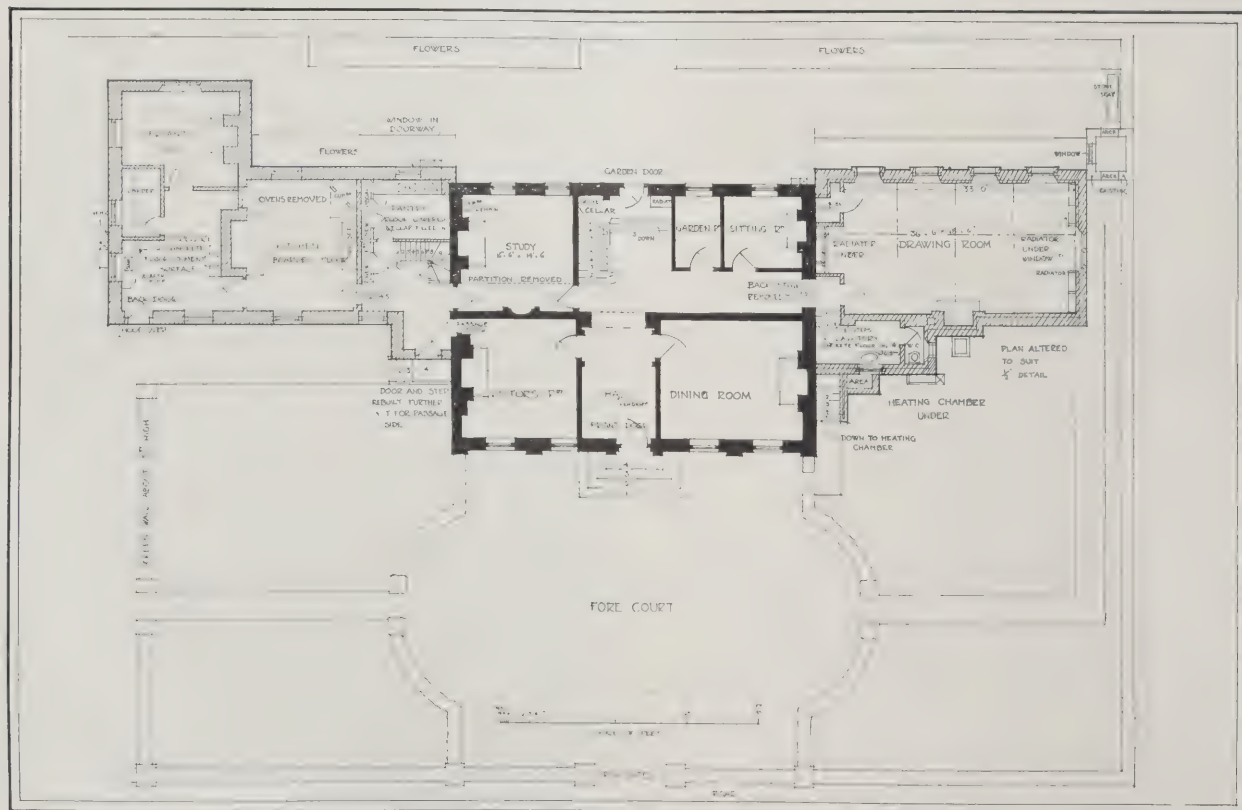


Details, Plaster Decoration; Entrance and Stair Hall

thing it might be mentioned that the doorways to be found in Bedfordshire, and more particularly in the vicinity of Woburn, show abbreviated doors resting upon brackets formed like the thin strips of dough that lace the tops of tarts made by old fashioned cooks.

What is more to our immediate point, however, is that these same houses abundantly prove the vital diversity compassed by the Classic mode in such an array of enticing compositions that the range of in-

teresting possibilities seems inexhaustible. The tightness of style, which those unacquainted with this Protean diversity are sometimes likely to attribute to the Classic mode, is non-existent. There could not be imagined a more engaging diversion for architects and architecturally inclined laymen than an extended study of those ample-mannered eighteenth century dwellings of which Harington House is such a conspicuous and so successful an example.



Plan of Main Floor, Harington House; Shaded Portions Show Additions

Reflections on the Exposition des Arts Decoratifs

By ELLOW H. HOSTACHE

THE words *Exposition des Arts Decoratifs* are still to be read, in sharply cut type, on the orange, black and gilded posters adorned with lace-like frames on buff, khaki and chamois backgrounds, which have been the outstanding feature of this post-war manifestation. October is waning—and so is this Exposition. This Exposition! What of it? . . . A few million cubic feet of concrete and plaster, shedding their varnishes and now ready for the *masse* of the demolisher; also, probably, just as many suits brought at the same time by exhibitors *vs.* contractors *vs.* the Town of Paris for breaches of promise,—for such is likely to be the outcome.

Well! . . . And what of the Decorative Arts? . . . *Les Arts Decoratifs* are no more! . . . This bastard offspring of anæmic artisanship and efficient salesmanship was not fit to live. We buried it on the banks of the Seine! But what was it all about? . . . About ornament! The dictatorship of ornament! Modern society, caught in a net of lines, dazzled by colors, crushed under volumes disposed by unorganized agents of arts in an unorganized plan to earn their living! Tickling the soles of our feet, massaging our optic nerves, caressing our few ounces of brain matter! Now it is the right of these agents to earn their living; but it is obtuse of

us to allow our senses to enslave our faculties for the sake of a Papuan delight and a seraglio-like *far niente!* It is for us to strip ourselves of all gaudy rags and gewgaws, and to discover that ornaments often hide a fault, a mistake, a flaw or a malformation. Under the unstable sky of sunny France, the Decorative Arts are no more! Next year's tourists will visit the ruins and the tomb. A good deal of money is expected. "On to Avalon!" is the spirit.

Everyone of these so-called arts was pretending to its own *raison d'être*, its own meaning and end altogether! They were to be considered, and we weren't! It was such a good joke that we all laughed—and they died! Like fairs and fairies they died—in spite of that nonsensical Peter Pan! To be young and to want to stay young appeal to our understanding; but to be freakish, and to want to remain freakish, goes over our heads and hits only our sense of humor. Peter Panoisivity and decorrosivity are all very well in the movies, but, alas, somebody, sometime ago, built the Parthenon—and somebody else, not so long ago, built a very powerful airplane! . . . Thinking of these mileposts of progress, and having to write to a friend of this Exposition, one simply refuses to take the gilded quill from the inkstand-with-the-sand-shaker, to put it down in ornate



Poster Design



Entrance from Place De La Concorde



Wing, Austrian Pavilion

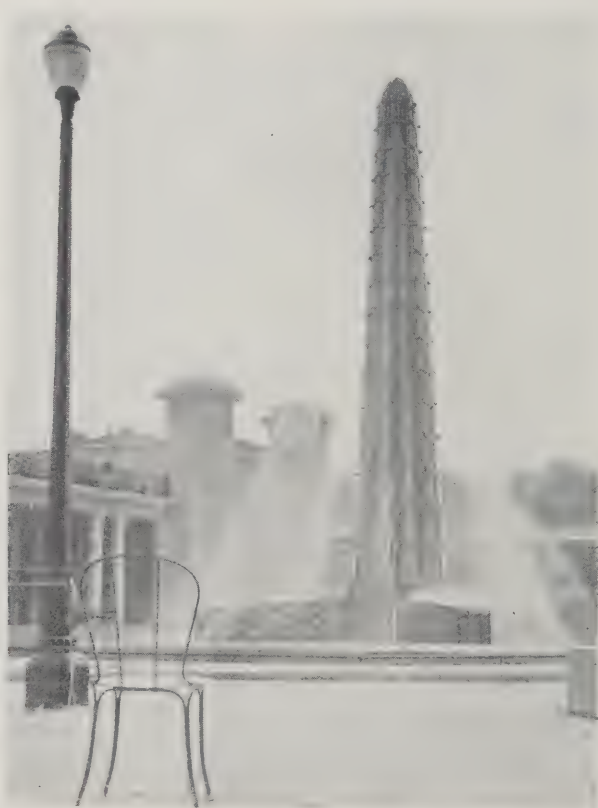
capitals. One leans over one's typewriter, and this is what one may say, were expression really to be given:

"The Exposition was an hour of fancy, and a long hour! Fancy implies its own restrictions. And wishes are not horses! Neither all hours nor all doors are open to fancy. Fancy is ephemeral. This

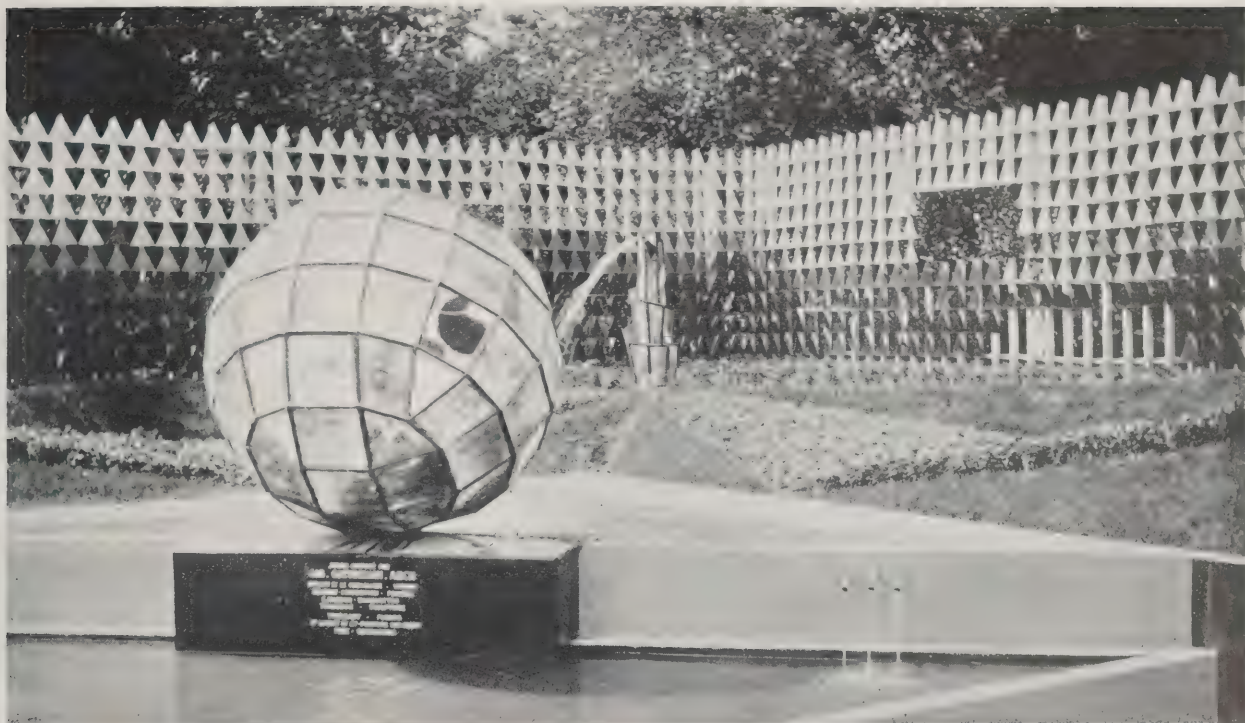
exhibit pleased or did not please, and this very fact indicates its value. Quantities of pleasure and qualities of it are not a criterion of high civilization. The largest exhibition will not fill the space separating beauty from pleasure. This exhibition tried to make us believe that there is no difference between them.



Entrance, Swedish Pavilion



De Laque Fountain, Esplanade des Invalides



Garden Fountain; Stained Glass Ball Illuminated at Night

Everything on show was an appeal to our senses, if not directly to our pocketbooks; these senses fed up and the purse made lean, the intelligence after all remained unsatisfied. The style this Exposition was to advertise and did over-advertise is a cross between the Hispano-Suiza of an oil king in tuxedo

and the gilded *carrosse* of a Louis XV marquis in powdered wig; two beings and two means equally far from us and the general contemporary activities, needs, feelings and desires most of us have.

"Three days during these six months this exhibition intruded on our brain. Came the day, during



Tin-Plated Pavilion of the Newspaper, "L'Intransigeant"



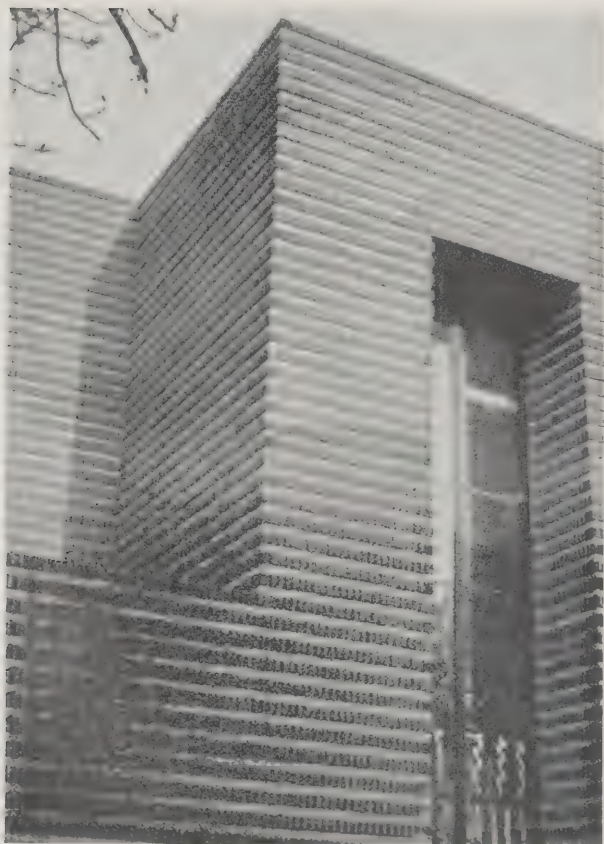
Arcade of French Shops, in Multi-Colored Plaster



Wood and Glass Pavilion of Soviet Russia

the building-up, when we felt the engineer, the organizer waking in us. Came the day, during the summer, when everything was at its best and perfected, when we felt the grandeur of achievement, of activity, of potentialities, of nations' brains collaborating. Came the day, during the demolition, when the reformer in us took pleasure in seeing the clearing-up of this earth-skin from all the warts of super-production and super-possession. We understood then that the main question was, and as it has not been solved, still is, proportion, *rappports*, and that every epoch, segregated through the ages and labeled great, had satisfactorily answered the same question. That day we gloated with the architects.

"*Panem et circenses!*" The crowd was satisfied by this orgy of colors and shapes, but the individual felt himself as a visitor in a museum of specialties not very much in demand. What was, then, expected, required? The individual thought he knew it the day proportions unveiled themselves to him; but, alas, this was almost impossible to grasp in the claws of words; thousands of books were written on that subject! The bare truth is that there is an urge in every one of us to coax all the many talented, and sometimes geniuses, to apply themselves to the creation and elaboration of some better devices for the elevation of our faculties than mere skin titillators and de luxe cages and jewels for parrots and monkeys. Drifting along the Esplanade des Invalides, one was soon tired and bored. Ten thousand ways of framing your best girl's picture, or even



Facade Detail, Danish Pavilion



Chimney, Dutch Pavilion

ten thousand different perfume bottles offered to her covetousness, do not require the best of any man's high-power intelligence or make other demands!

"Proportion has struck us by its misuse, abuse and disproportion. Economy, say what you will, is the haunting topic of all builders and organizers. Actually, one has to build, then, to organize one's life. One has to be an architect and an economist. Economy does not mean poverty but concentration and perfect adaptation of means to an end. One knows that every master of art was and is, in his work, an economist. Hygiene, sports, engineering, even good cooking, taught us certain methods that ease the body and the mind; and that though men differ in their methods, many of these are drawn from human standards, and that trespassing against them causes degeneration." This is true in art, applied or not. Before everything, one must live. Too many of our best intellects busied themselves in a contemplative dilettantism. The modern world is in full formation, and drags with it too many elements of the past lacking any further reason for remaining. One must discern the live parts from the mortified, and the Exhibition failed to show us such a choice in arts. Actually, artistic creation is very strong. Never, at any epoch, has such a creation been isolated from the exterior world. Master architects of old had the spirit of our engineers of today. Today's architects are too often mere interior and, alas, exterior decorators! To this has architecture now descended!

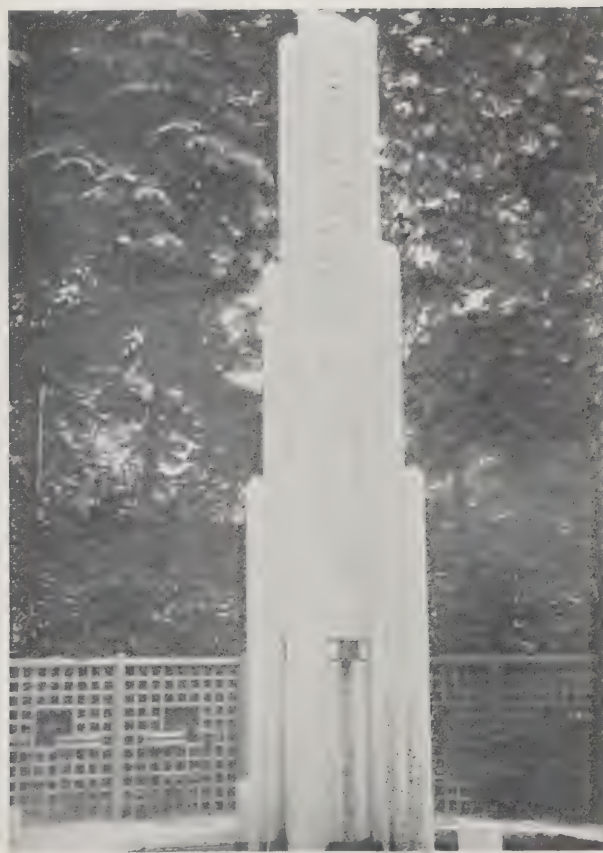
"Why a Louis XVI elevator, a Gothic type type-



Entrance, Looking Out to Quai d'Orsay



Courtyard with Statue; Polish Pavilion



Unique Fountain



Garden and Pavilions of the National Manufacturers of Sevres

writer, a Rococo wireless, a wood carved and inlaid body for your car, the wilderness of the African forest on your wallpaper, jellyfish-like lampshades, Dante's Inferno cast in concrete for the front entrance to your bank, and pottery of the middle ages for your drawing room? Why prefer the rough handwork of an artisan in wrought iron when we have perfect and polished steel bars at our disposal, more beautiful in their geometry and cheaper in

their cost? Do we still eat, on Sundays, peacocks presented on the table roasted with all their feathers? No! Well then, let us express our epoch in its own furniture; and, strange as it seems, we shall be following the "lesson of the past"! We will have our style and no more words in our vocabulary to explain the Decorative Arts. The entire Exposition might be described as a futile gesture,—if not a hopelessly lost opportunity for helpful accomplishment.



Belgian Pavilion, Illuminated

BUSINESS & FINANCE

C. Stanley Taylor, *Editor*

1926 to be Another Six-Billion-Dollar Building Year

EACH year for the past five years THE ARCHITECTURAL FORUM has conducted an extensive survey among architects and builders to determine the amount of building construction contemplated for the ensuing year. The method used includes the obtaining of confidential reports from thousands of sources covering six geographical divisions of the United States in 19 building classifications. These reports are carefully tabulated and correlated and the totals determined by a careful system of weighting. Thus the final forecast figures are established after months of careful research.

Each FORUM forecast during this five-year period has proved to be unusually close to the actual figures shown at the end of the year, and in all cases conservative, so that through the coöperation of the architectural profession this survey has become recognized as the most authoritative presentation of probable building activity. The allocation of activity

throughout the country is an almost certain indication of what will take place in the building industry.

In view of the fact that THE FORUM Forecast for 1926 indicates another 6-billion-dollar building year, probably equal to the record-breaking activity of 1925, it will be interesting to review briefly the building activity of the year 1925 in order that later comparisons may be clear. As this article goes to press the figures for the year 1925 indicate that approximately 6½ billion dollars were spent that year.

At the beginning of the year 1925 all conditions indicated that the year would probably equal 1924, which established a record up to that time; but no one anticipated completely the amazing volume to which the building totals have climbed. Records were broken everywhere during 1925, as will be seen by an examination of the accompanying chart (Figure 1) which shows the total value and volume of new building in 1925 as compared with each year since

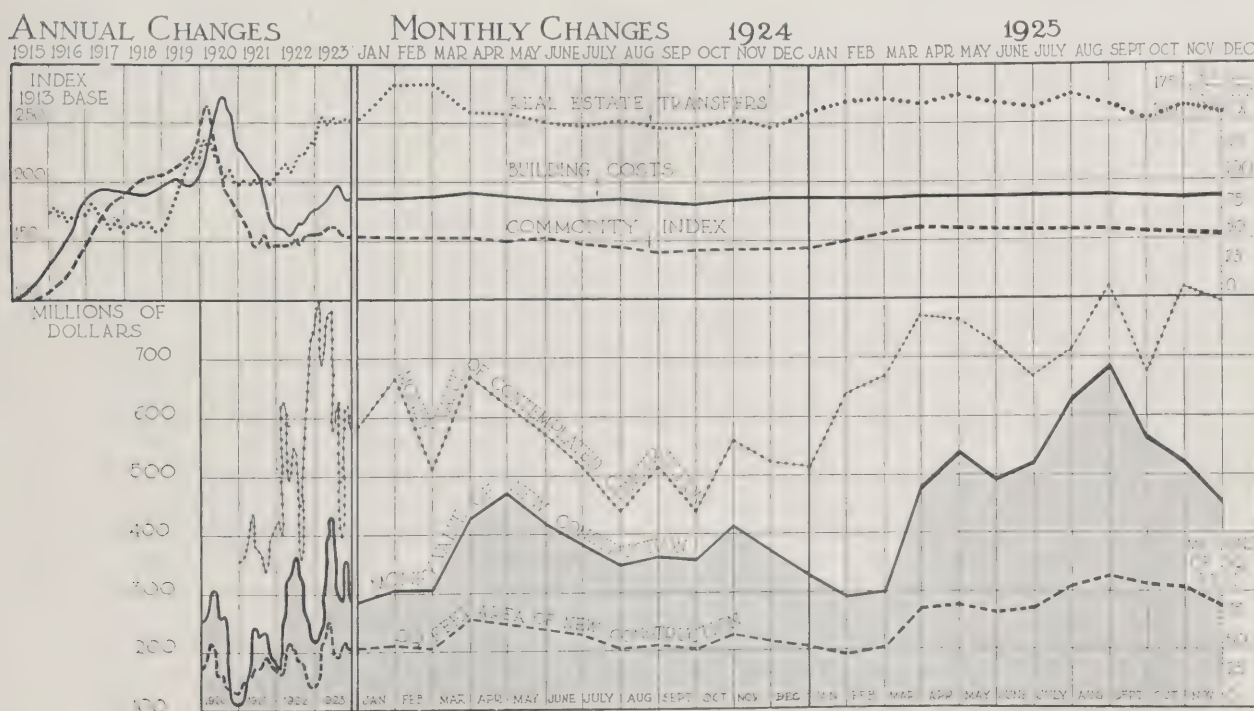


Fig. 1. The Building Situation at a Glance

Based on data obtained through The Forum Research Department; U. S. Chamber of Commerce; F. W. Dodge Corporation and Engineering News-Record

1920; it also indicates the trend of building costs, commodity costs and real estate transfers in the United States, very carefully recorded and tabulated.

The accompanying table (Figure 2) indicates the anticipated expenditures for new buildings during the year 1926, classified according to 19 types of structures and divided into six geographical divisions of the United States. This tabulation shows the amazing total of \$5,584,782,500, which will pass over the boards of architects and into actual construction during the year 1926. In addition to this vast sum to be spent for building materials and labor there must be considered the fact that in the small house field and that of industrial construction there is considerable building not developed from architects' plans, probably totaling another half-billion dollars, swelling an already colossal figure.

Thus it is predicted that 1926 will be another 6-billion-dollar building year, with certain changes in the relative proportions of activity in building types.

Each year the grand total of THE FORUM Forecast is broken up into percentages showing the anticipated activity in new building construction for each of the 19 building types in the six established geographical divisions of the United States. By comparing these percentages for 1925 and 1926 it is possible to ascertain the changing public demand for new buildings and to establish for each of the districts the relative activity which may be expected.

The first of the interesting details is to learn what, if any, shifting of public demand has occurred in

building requirements for the following six geographical divisions of the United States:

- 1. Northeastern States, including Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
- 2. North Atlantic States, including New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia.
- 3. Southeastern States, including Virginia, North Carolina, South Carolina, Georgia and Florida.
- 4. Southwestern States, including Kentucky, West Virginia, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, Arkansas.
- 5. Middles States, including Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.
- 6. Western States, including Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, California.

The comparison given shows that there will be approximately the same relative building activity in each of the six geographical divisions of the United States during 1926 that there was during 1925, with some decrease in the Northeastern and Middle States, and a considerable increase in the Southeastern States (due to the unusual activity in Florida).

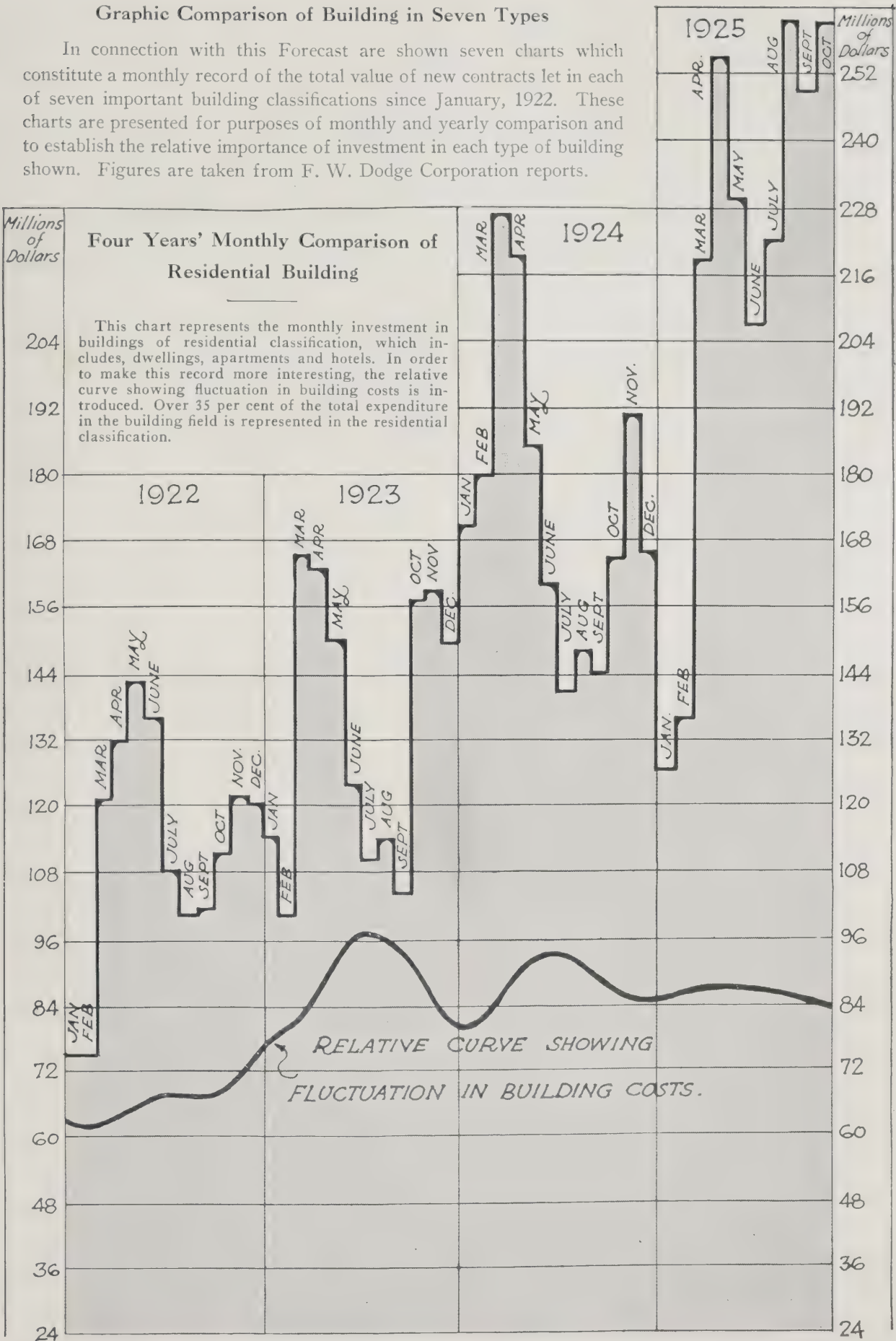
The table given here shows a comparison of public demand for new buildings in 1925 with that of 1926 for each of the six districts just indicated,—in other words, a comparison of the relative demand

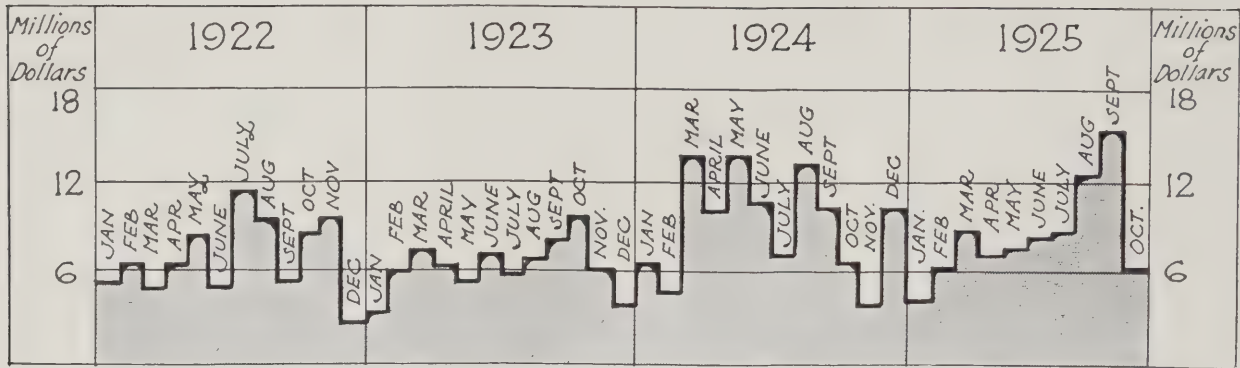
BUILDING TYPE	N. EASTERN STATES	N. ATLANTIC STATES	S. EASTERN STATES	S. WESTERN STATES	MIDDLE STATES	WESTERN STATES	U. S. A.
Automotive	24,262,500	43,042,500	9,970,000	9,877,500	49,877,500	15,072,500	152,102,500
Banks	18,295,000	55,550,000	10,022,500	22,135,000	59,317,500	20,930,000	186,250,000
Apartments	25,272,500	329,042,500	40,620,000	18,627,500	137,565,000	50,540,000	601,667,500
Apartment Hotels	8,487,500	52,850,000	12,712,500	9,425,000	71,927,500	36,612,500	192,015,000
Clubs Fraternal, etc.	15,837,500	79,845,000	18,437,500	15,727,500	92,137,500	33,697,500	255,682,500
Community Memorial	18,030,000	53,812,500	4,712,500	9,772,500	38,287,500	24,835,000	149,450,000
Churches	39,370,000	79,232,500	17,537,500	41,510,000	78,042,500	28,752,500	284,445,000
Dwellings (Under \$20,000)	11,635,000	104,227,500	20,312,500	13,675,000	49,012,500	30,277,500	229,140,000
Dwellings (\$20,000 to \$50,000)	9,985,000	49,217,500	10,415,000	12,040,000	35,225,000	9,142,500	126,025,000
Dwellings (Over \$50,000)	7,295,000	27,372,500	5,287,500	5,807,500	27,985,000	9,737,500	83,485,000
Hotels	45,275,000	131,125,000	59,747,500	40,522,500	240,480,000	68,035,000	585,185,000
Hospitals	35,700,000	112,662,500	8,925,000	16,045,000	87,410,000	49,150,000	309,892,500
Industrial	42,632,500	248,917,500	6,527,500	29,810,000	130,962,500	24,542,500	483,392,500
Office Buildings	38,727,500	240,527,500	38,932,500	37,017,500	212,005,000	96,337,500	663,547,500
Public Buildings	18,597,500	79,242,500	19,760,000	19,325,000	49,057,500	39,382,500	225,365,000
Schools	68,815,000	255,202,500	23,017,500	38,400,000	236,992,500	68,217,500	690,645,000
Stores	8,660,000	38,027,500	11,150,000	7,032,500	43,415,000	14,932,500	123,217,500
Theaters	7,000,000	26,462,500	6,517,500	10,490,000	99,632,500	23,755,000	174,457,500
Welfare, Y. M. C. A., etc.	5,775,000	35,077,500	7,435,000	1,907,500	12,295,000	6,327,500	68,817,500
Total Value of New Buildings	450,252,500	2,041,437,500	332,040,000	359,147,500	1,751,627,500	650,277,500	5,584,782,500
Per Cent.	8.1	36.6	5.9	6.4	31.4	11.6	

Fig. 2. 1926 Prediction by Districts in 19 Building Classifications
(States Included in Districts are Given on This Page)

Graphic Comparison of Building in Seven Types

In connection with this Forecast are shown seven charts which constitute a monthly record of the total value of new contracts let in each of seven important building classifications since January, 1922. These charts are presented for purposes of monthly and yearly comparison and to establish the relative importance of investment in each type of building shown. Figures are taken from F. W. Dodge Corporation reports.





Four Years' Investment in New Hospitals and Institutions

for new buildings in each district for 1926 as compared with 1925. The changes in these percentages forecast the changes of construction activity from a geographical viewpoint:

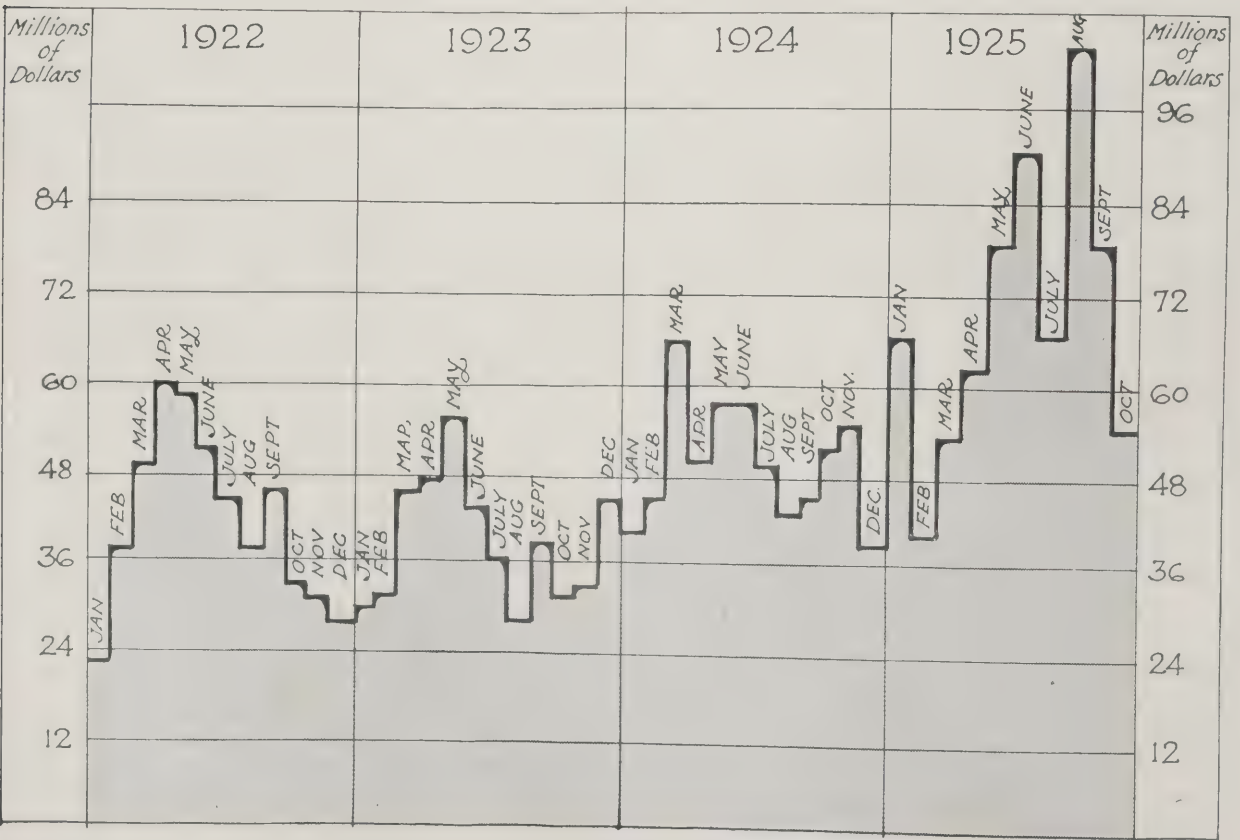
Public Demand for New Buildings

	1925	1926
	Per cent	Per cent
1. Northeastern States	8.4	8.1
2. North Atlantic States	36.3	36.6
3. Southeastern States,	3.6	5.9
4. Southwestern States	6.3	6.4
5. Middle States	32.4	31.4
6. Western States	12.9	11.6

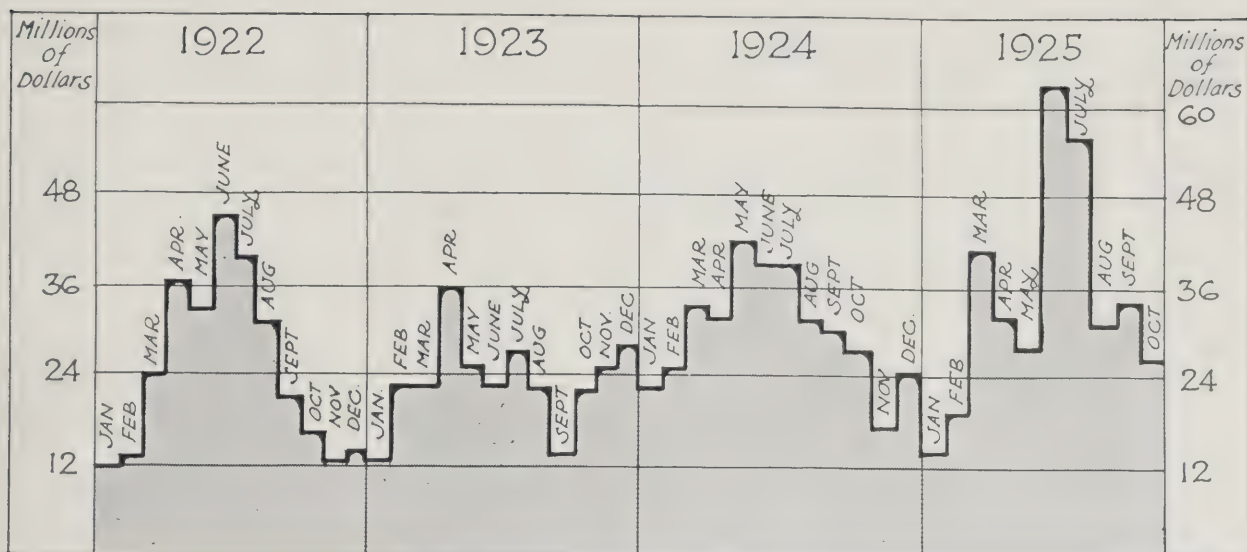
In the course of the research work involved in establishing this forecast for 1926, THE ARCHI-

TECTURAL FORUM has had the opportunity of making an interesting series of observations as to the changing character of new building in the United States. The accompanying percentage tables indicate the change in public demand for new buildings; but it may also be noted that the general character of materials and workmanship in buildings is constantly improving, an indication encouraging indeed.

The high cost of building, together with increased real estate values, has during the past few years provided a forced education for the investing public in this field, indicating the fallacy of poorly considered planning and the use of inferior materials and workmanship. The great effort in the planning of buildings today is to eliminate all waste space and provide a maximum of rental or utility efficiency,



Four Years' Investment in New Commercial Buildings



Four Years' Investment in New Schools and College Buildings

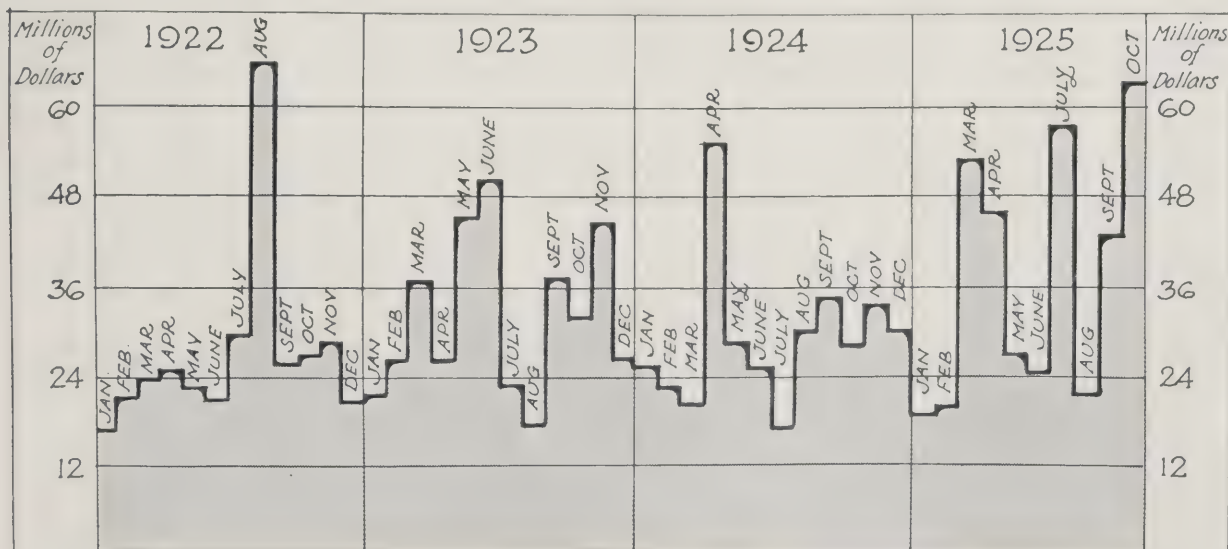
at the same time attempting definitely to reduce depreciation and maintenance cost through good architectural specifications and sound building practice.

A highly important factor in all forecasts of this nature is the background of economic conditions. If business conditions in the United States were not good, with sound promise of so remaining for several years, there might be expected a definite curtailment of building activity,—a slowing down of the great momentum established during the past few years. But conditions are good, with definite signs of stability, and the building industry is the indicator of conditions; so with the entire economic situation favorable, there is little fear of a break in public confidence or any basic business change which will interrupt the anticipated program of another 6-billion-dollar building year during 1926.

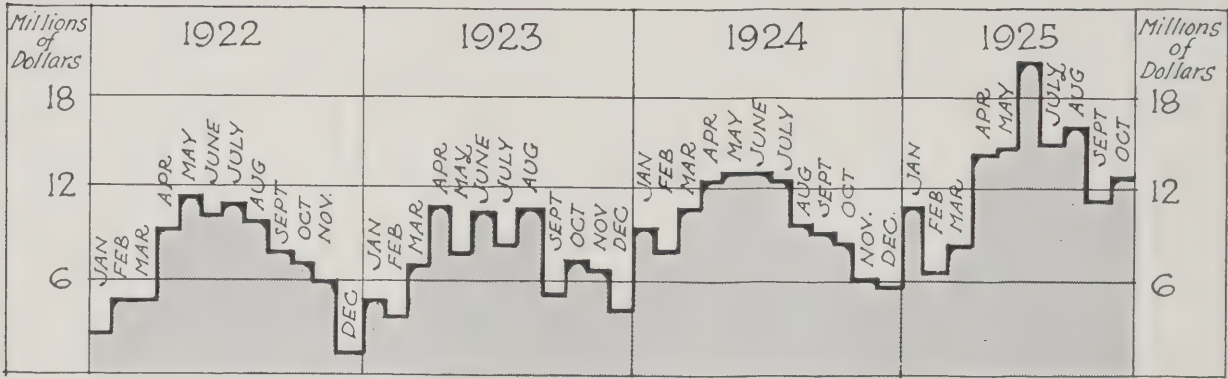
There is some talk of the building shortage having been met—of rentals coming down—of building again assuming its normal activity. What is a

"normal" building year at the present time? Surely it cannot be the pre-war normal. The population of the United States has increased materially since 1914; the cost of building has increased, the standards of housing American life and business have been raised; the demand for buildings is greater.

All is well with the building industry. It is going about its business seriously, contributing to the wealth and comfort of the nation. Some idea of the magnitude and importance of the construction industry may be gained from a statement recently made by Secretary of Labor Davis in which he said: "More than 11,000,000 of our people are dependent for their living upon the construction industry, and 22 per cent of all the skilled and unskilled labor of the country is engaged in the building branch alone. Some 250,000 freight cars are required to handle the materials. Our building bill is \$200 per year for each family in the United States. It is truly the chief barometer of the business of the country.



Four Years' Investment in New Factory Buildings



Four Years' Investment in New Churches

When construction gains, prosperity is with us. It is the great outstanding influence for good or bad in our financial progress, and has been for many years."

Architects are busier than ever before,—a sure sign of great building activity to come. The number of plans being filed is constantly increasing,—another sign of activity which is never known to fail.

THE ARCHITECTURAL FORUM anticipates and predicts that approximately the following number of new structures will be added to the building census of the United States during the year 1926.

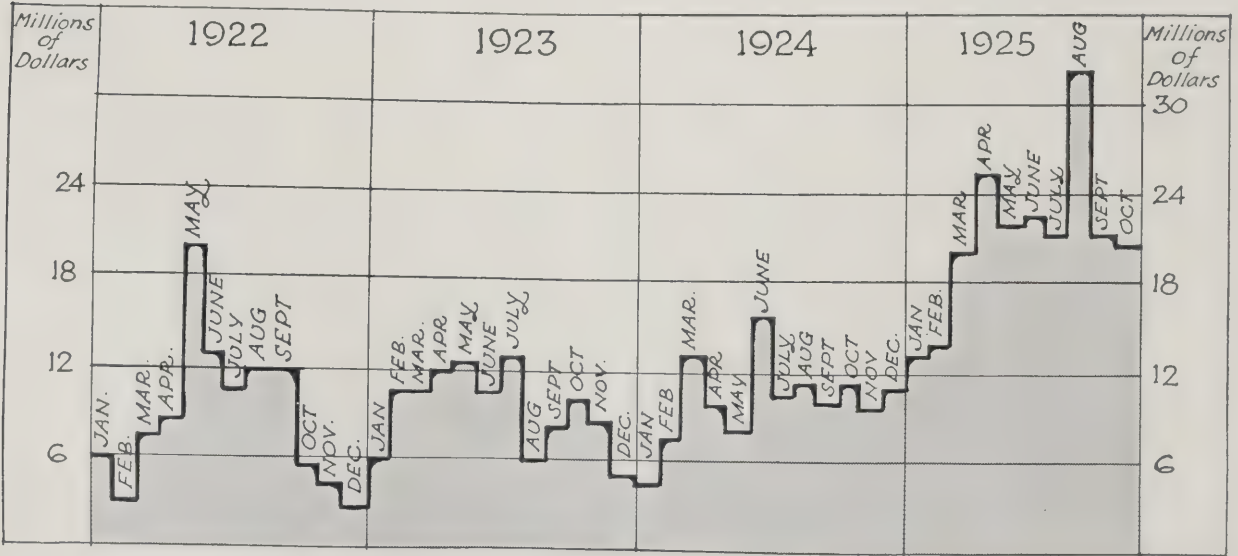
The total number of building permits which will be issued for structures of every kind, including alteration projects, will be approximately 700,000.

There will be constructed in the field of new buildings about:

Automotive Sales and Service Buildings—large	3,174
Automotive Sales and Service Buildings—small	6,740
Private Garages	274,000
Bank Buildings—large	1,320
Bank Buildings—small	4,350

Apartment Buildings—large and small ..	28,950
Apartment Hotels	1,240
Club and Fraternal Buildings	2,170
Community and Memorial Buildings	1,104
Churches	3,160
Dwellings, under \$10,000, including farm	193,000
Dwellings, \$10,000 to \$20,000	42,000
Dwellings, \$20,000 to \$50,000	14,700
Dwellings, above \$50,000	3,190
Hotels, under 50 rooms	1,874
Hotels, over 50 rooms	1,414
Hospitals	1,117
Industrial Buildings—large and small	9,782
Office Buildings	3,074
Public Buildings	972
Schools, small	2,156
Schools, large	1,742
Stores	7,842
Theaters	1,645
Welfare, Y. M. C. A., K. of C., etc.....	670
Farm Buildings, not including dwellings..	163,420
Institutions and Libraries	3,634

TOTAL NEW BUILDINGS FOR 1926, 778,440



Four Years' Investment in New Club and Fraternal Buildings



The Ebell Club, Long Beach, Calif.

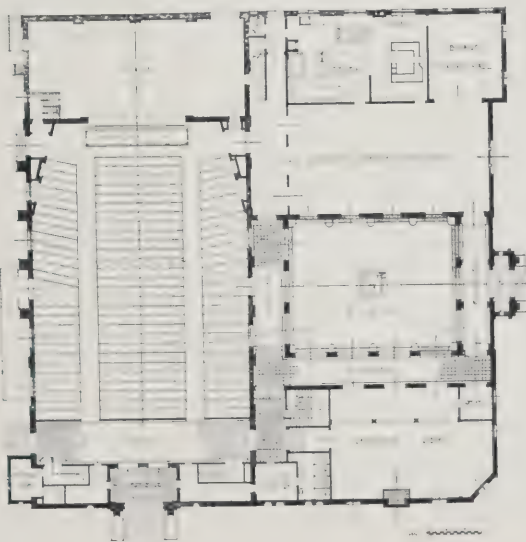
C. T. McGREW & SONS, ARCHITECTS

By HAROLD J. ASHE

IF the Ebell Club had built its new home in New York instead of Long Beach, the plan would have called for a building perhaps 50 feet wide and 150 feet high. It would have been a typical New York clubhouse, differing from other buildings of the same type chiefly in the fact that a large auditorium with a practical stage for theatrical performances is an important feature of the building's plan.

Fortunately, land values are not as high in Long Beach as in New York, so that instead of a tall, narrow building, faced with brick or stucco and enriched with Spanish Renaissance details, a group of low, semi-detached buildings was possible for the

architectural expression of this active and interesting women's civic organization. The three chief divisions of the plan are logically and successfully indicated in the design and layout of the entire group. The low, two-story buildings which house the reception room and committee rooms on one side and domestic service dining hall, kitchen and living quarters on the other side, are connected by arcaded cloisters which enclose an open patio. An open archway, richly ornamented with Spanish details, leads into the connecting cloister between the two buildings. At the rear of this group of low buildings and patio is the large auditorium. It has a seat-



Plan A—First Floor



Plan B—Second Floor

ing capacity, including the balcony, of 1200 and is the largest in Long Beach. The theater building rises to nearly twice the height of the low front buildings and connecting cloister, forming an excellent background for them. The auditorium of the theater is accessible not only through the large public entrance on Third Street but also through five doorways opening into the cloister and buildings which face Cerritos Avenue, thus having ample entrances.

When the building committee of the Ebell Club considered plans for a new building to house their various activities they had foremost in their minds, among other salient features, a possible arrangement and size of windows which would permit a maximum amount of sunshine to enter into the various rooms of the clubhouse, thus curtailing as much as possible the use of artificial light. The architect successfully evolved a plan Spanish and spacious in character. Typical of Spanish architecture, a patio occupies the center of the building. Open two-story cloisters or arcades surround the four sides of the patio. This is paved with flagstones and has a low and shallow pool built of Spanish tiles at its center.

The main entrance of the club leads directly into a cloister which connects the two main parts of the club itself. On the first floor a large reception room, office, cloak room and lavatory are located at the left. At the right, on entering the first floor, is a domestic service dining room, a small board dining room, and a completely equipped kitchen. The second floor of the building at the left of the entrance

contains a few spacious committee or class rooms, with small kitchens, cloak room and lavatory. Part of this floor is occupied by the arcaded loggia which extends around two sides of the patio. The second floor of the building at the right of the entrance is largely taken up by the upper part of the domestic service dining hall, a gallery which extends along two sides of this hall, and a complete apartment for the resident manager of the clubhouse. The plan of the theater, which occupies at the rear nearly half of the site on which the club is located, possesses an auditorium with overhanging balcony and deep stage. A feature of this plan, which affords many lateral exits, includes a wide foyer, spacious entrance vestibule, retiring room and two flights of steps to the balcony. At the rear of the balcony is a perfectly equipped projection room. The theater is separated from the club proper by a cloister corridor which can be closed off entirely by metal doors.

So large and numerous are the windows and door openings in the auditorium that artificial lighting is never required in the day time. The club is so well planned and the various departments so thoroughly separated and isolated that it is possible for 500 people to be banqueting in the dining hall, for committee meetings to be in progress in the "section rooms," for guests to be dancing in the open patio, and for 1200 people to be attending a performance in the theater without any one of these groups disturbing another. In fact it would be possible to conduct several functions simultaneously in these buildings.



Detail, Entrance



The Patio

The Ebell Club, Long Beach, Calif.
C. T. McGrew & Sons, Architects

Report of the Jury

LEHIGH PORTLAND CEMENT HOME COMPETITION

By AYMAR EMBURY II, Chairman

THE Jury selected to judge this Competition noted with pleasure the high quality of design as well as the technical excellence of the presentation of the greater part of the many drawings submitted. The judgment was as interesting as it was difficult, because of the necessity of choosing between many designs of almost equal excellence. On the other hand, the Jury, composed entirely of architects familiar with the country house problem, felt that there was evident in a great many of the designs submitted a regrettable tendency to evade the spirit while conforming to the letter of the program. This program was obviously intended to produce plans of five-room, one-story houses or of six-room, two-story houses for people in moderate circumstances and to be built on suburban lots of average sizes; therefore, drawings of houses intended apparently for eccentric occupancy were regarded with disfavor by the Jury, regardless of the quality of their architecture or their interesting character.

Following the same thought, the Jury gave preference to houses which were designed to meet usual conditions over those in which the arrangement of

rooms or the placing of the entrances indicated the treatment of special cases. There was also little attention paid in the designs to the requirements as to masonry partitions; several schemes in other ways excellent were not included in the prize group for this reason. The Jury found also that several very charming designs could be considered only as sketches, because of a false scale, which made them appear in the drawings far larger than was correct, and which would have made them look like toy houses if they were actually constructed.

Of all the designs submitted in both classes, the Jury decided that the two five-room bungalows placed first and second stood in a class by themselves, because their designers had shown real appreciation of the nature of the problem in producing houses with the maximum usable space in proportion to the areas of the floors, with proper arrangement for privacy, with an intelligent relation between rooms, all this given a simple, charming and reasonable architectural treatment. The Jury felt that these houses would build well and economically, and would give the owners as much real comfort as five rooms can



Jury for the Lehigh Portland Cement Home Competition

Left to Right—David Adler, Chicago; Aymar Embury II., New York; Charles G. Loring, Boston; Harrie T. Lindeberg, New York, and D. West Barber, Knoxville, Tenn.

afford. They involve no sacrifice of comfort to picturesque effect, and no elaborate detail has been dragged in to hide an inability to cover up a bad mass. The deciding factor between the two was the greater compactness of that placed first. The design placed third was of only slightly less merit and possessed the same factors of solid design and realization of the problem as the other two. That placed fourth showed too great a tendency to break up an already small mass without sufficient reason; it was also marred by having a living and dining room over-large in comparison with the bedroom and kitchen, a defect which injured an otherwise excellent scheme and detracted from its value.

None of the two-story houses quite approached, in distinction, the two bungalows placed first and second. The problem is, of course, enormously more difficult; a six-room, two-story house inevitably resembles a packing box to an alarming extent, and those solutions which were most picturesque showed either roofs beginning at the first story level or buildings so underscaled as to appear like twelve-room houses at a small scale. The Jury felt that honesty and comfort were as essential as picture book architecture, with the result that the design placed first was chosen because of its simple, compact and adequate plan combined with an exterior of considerable excellence. It is not an extraordinary piece of architecture, but it is logical and sound, both structurally and architecturally. The design placed second has the same qualities. The designer recognizes frankly the "packing box" quality, and so disposes his openings as almost to convince one of the desirability of the form. It is a delightful and buildable scheme. The design placed third is an excellent drawing on a good plan, but it seemed to the Jury rather a boiled-down large than a genuinely excellent small house. The house placed fourth might have been placed higher had the designer paid greater attention to his construction. The Jury felt especially that the exterior presented interesting and sound qualities of design, which were, unfortunately, somewhat obscured by its presentation.

Several of the mention drawings deserve special comment.* That submitted by Charles Crombie is of extraordinary charm, but adapted only for a special location and marred by having bedrooms under the roof slope; yet it is so pleasant and so simply planned that it was with regret that it was awarded only a mention. The Jury greatly admired the design submitted by Louis C. Rosenberg and Oliver Reagan, but felt that it was an over-ambitious scheme for the problem, the same being true of that submitted by Amedeo Leone. The amusing drawing and excellent architecture of Rufus A. Sherman's design were neutralized by the special conditions required to execute it as well as by a duplication of function in the alcove and dining room.

In conclusion, the members of the Jury wish to

say that they have thus stressed the defects in the plans rather than their merits, because these same defects are apparent in practically every competition of this type, and can readily be avoided by genuine adherence to the spirit as well as the letter of the program which is formulated for each competition.

PRIZE AND MENTION WINNERS LEHIGH PORTLAND CEMENT HOME COMPETITION

Judged on Friday, November 13, 1925.

GRAND PRIZE, \$1,000, to Angus McD. McSweeney, 3245 Octavia Street, San Francisco.

Winner of first prize in Class A (Drawing No. 48-A), and of Mention in Class B (Drawing No. 57-B).

CLASS A

First Prize, \$500, Drawing No. 48-A

Angus McD. McSweeney, 3245 Octavia Street, San Francisco.

Second Prize, \$300, Drawing No. 56-A

H. A. Surman, 800 Marquette Bldg., Detroit.

Third Prize, \$200, Drawing No. 113-A

Emil Backstrom & Herbert Magoon, c/o B. G. Goodhue Associates, 2 West 47th Street, New York.

Fourth Prize, \$100, Drawing No. 97-A

Francis Keally, 28 East 39th Street, New York.

10 Mentions in Class A at \$50 Each

Drawing No. 107-A, Charles Crombie, 906 Marquette Bldg., Detroit.

Drawing No. 23-A, R. M. Eskil, 1602 "H" Street, Sacramento, Calif.

Drawing No. 72-A, Shirley C. Horsley, 205 So. Juniper Street, Philadelphia.

Drawing No. 22-A, Amedeo Leone, 800 Marquette Bldg., Detroit

Drawing No. 68-A, O. H. McCord, 1 Quarry Road, San Rafael, Calif.

Drawing No. 46-A, William Rankin, 51 East 42nd Street, New York

Drawing No. 98-A, John J. Regan and Daniel W. Murphy, 155 East 42nd Street, New York.

Drawing No. 94-A, Louis C. Rosenberg and Oliver Reagan, 122 East 41st Street, New York.

Drawing No. 12-A, Rufus A. Sherman, 356 Milbank Road, Upper Darby, Pa.

Drawing No. 74-A, William E. Willner, 401 West 118th Street, New York.

CLASS B

First Prize, \$500, Drawing No. 91-B

John Floyd Yewell & Harry Starr, 10 East 43rd Street, New York.

Second Prize, \$300, Drawing No. 33-B

Walter L. Moody, 1528 6th Street, Santa Monica, Calif.

Third Prize, \$200, Drawing No. 108-B

Frederick H. Reimers, Tip Top Tribune Tower, Oakland, Calif.

Fourth Prize, \$100, Drawing No. 68-B

James N. Holden & Harold A. Rich, 177 State Street, Boston.

10 Mentions in Class B at \$50 Each

Drawing No. 46-B, Sara Leenhouts and Geo. F. Spinti, 3rd, 424 Jefferson Street, Milwaukee.

Drawing No. 57-B, Angus McD. McSweeney, 3245 Octavia Street, San Francisco.

Drawing No. 69-B, William B. Millward, 1686 Forest Avenue, Portland, Me.

Drawing No. 92-B, J. Pendlebury, c/o McKim, Mead & White, 101 Park Avenue, New York.

Drawing No. 17-B, Fred E. Pond, Santa Cruz, Calif.

Drawing No. 54-B, William Rankin, 51 East 42nd Street, New York

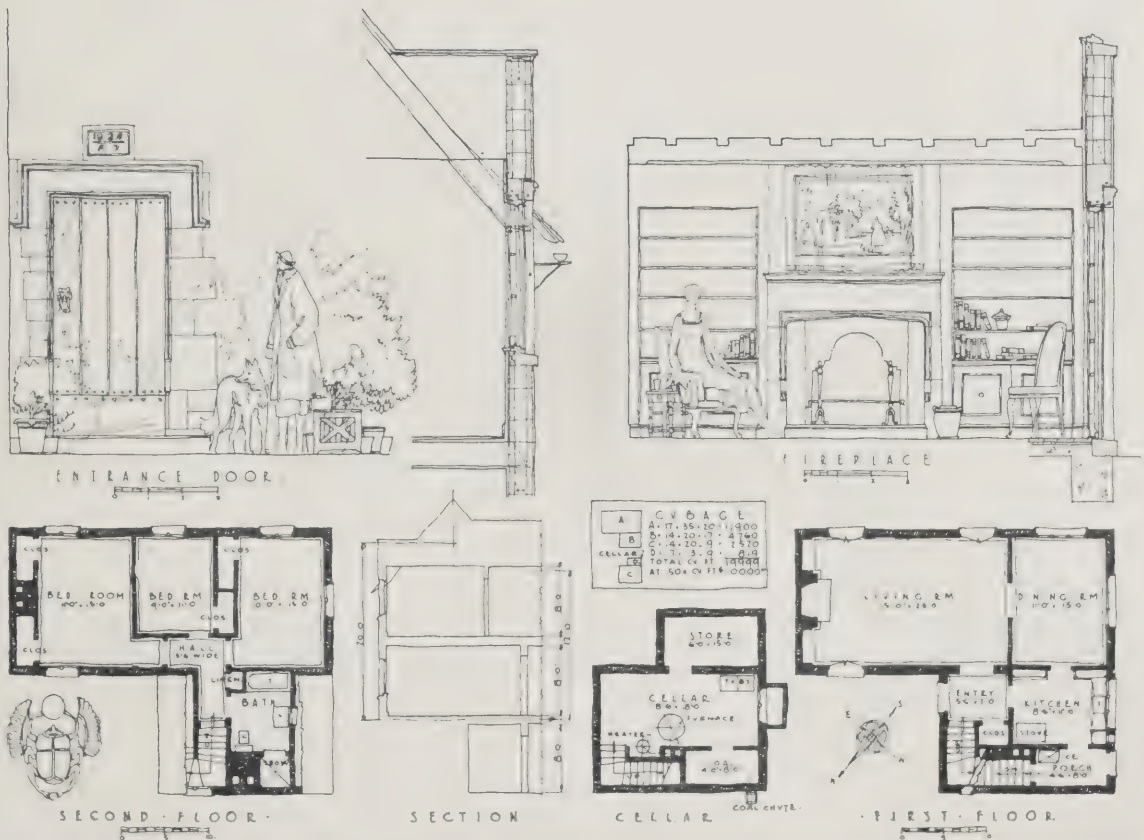
Drawing No. 78-B, G. Dewey Swan, c/o H. T. Lindeberg, 2 West 47th Street, New York.

Drawing No. 5-B, Carl C. Tallman, Seward Bldg., Auburn, N. Y.

Drawing No. 64-B, Harry L. Wagner, 355 N. Lawn Avenue, Kansas City.

Drawing No. 29-B, James D. Wickenden, 2627 College Avenue, Berkeley, Calif.

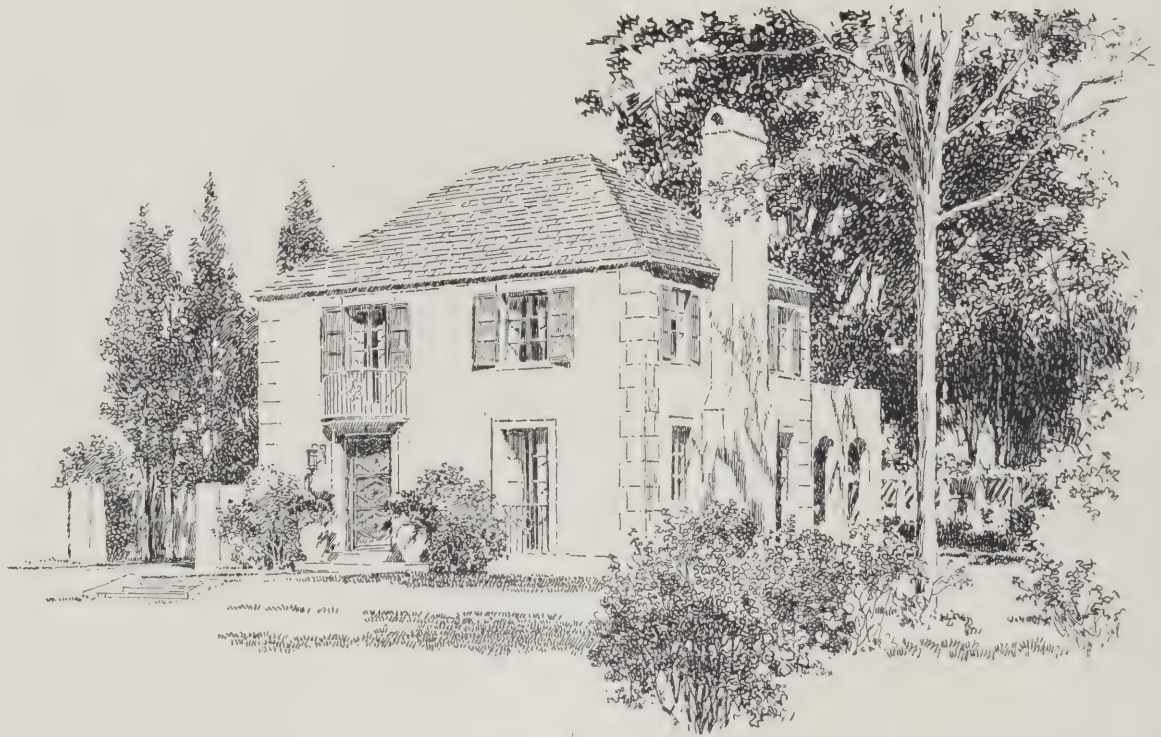
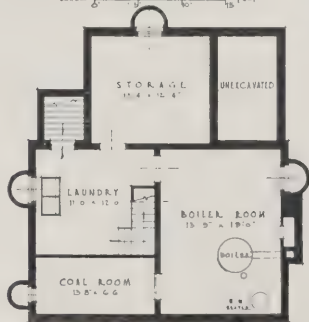
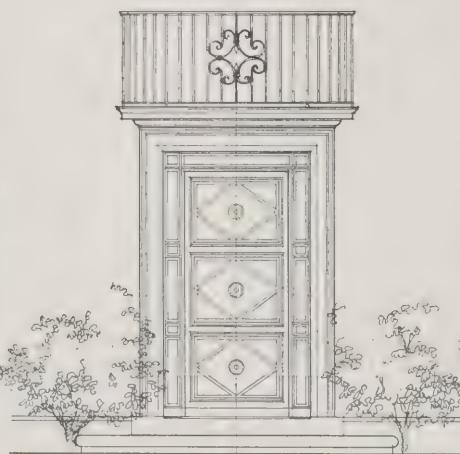
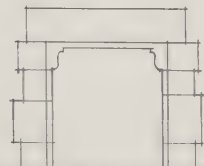
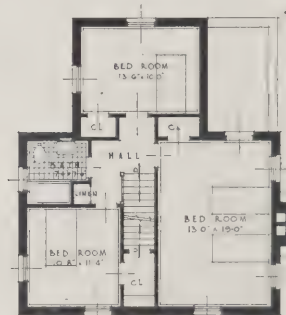
*Those who wish to examine the 28 prize and mention drawings may obtain a book containing the full set by addressing the Service Department, THE ARCHITECTURAL FORUM, 383 Madison Avenue, New York.



· SIX · ROOM · LEHIGH · PORTLAND · CEMENT · HOVSE ·

Grand Prize and First Prize Design, Class A

Submitted by Angus McD. McSweeney, San Francisco

FIRST FLOOR PLAN
SCALE 1" = 10' - 0"CELLAR PLAN
SCALE 1" = 10' - 0"ENTRANCE DETAIL
SCALE 1" = 10' - 0"FIREPLACE DETAIL
SCALE 1" = 10' - 0"SECOND FLOOR PLAN
SCALE 1" = 10' - 0"SECTION
SCALE 1" = 10' - 0"

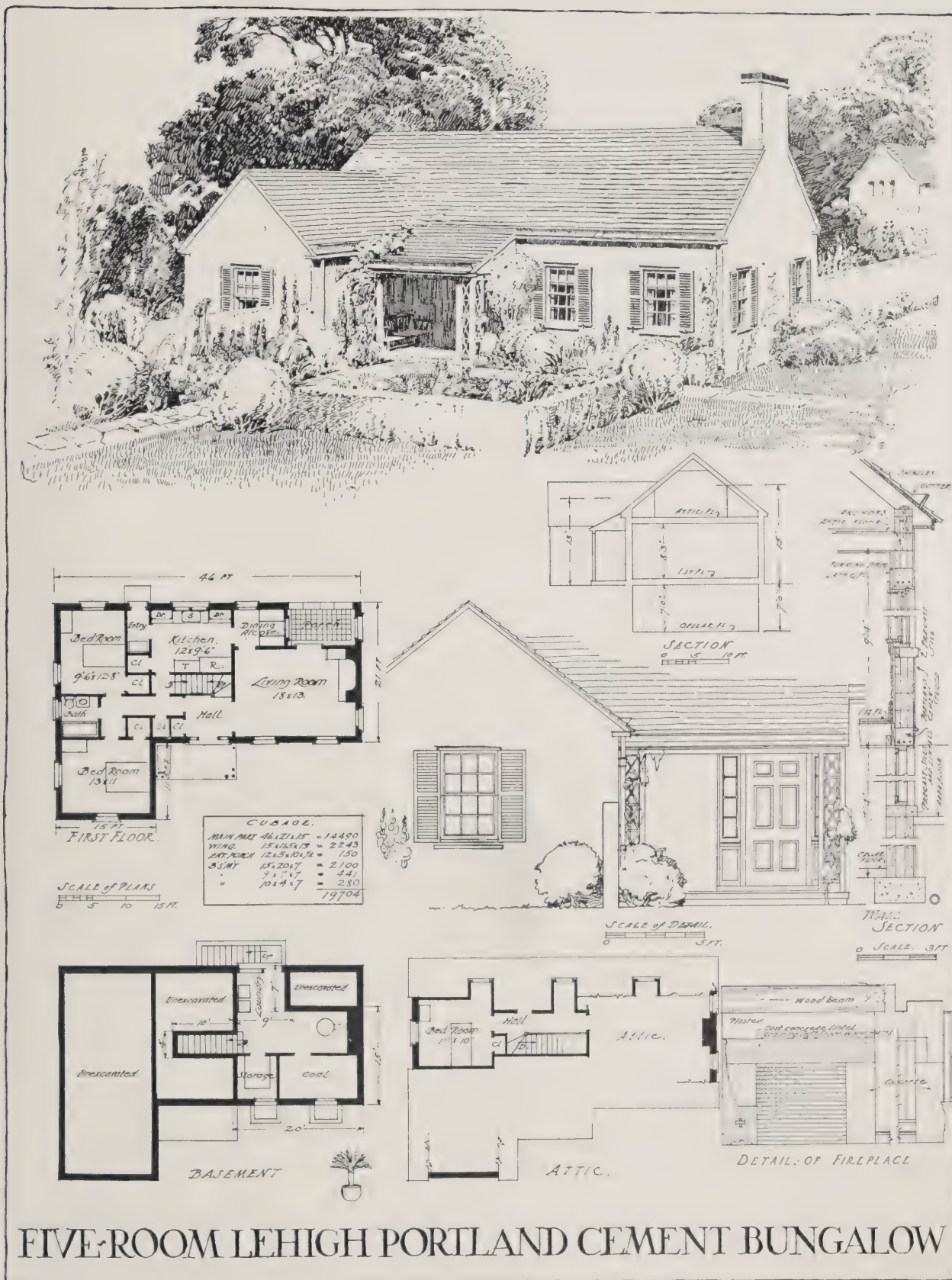
CUBICAL CONTENTS	
MAIN HOUSE	20'0" x 21'0" x 10'0" = 18,000
DINING RM. PAT.	15'0" x 10'0" x 8'0" = 6,000
FOR C.M.	8'0" x 15'0" x 4'0" = 480
TOTAL	24,480

DETAIL SECTION
SCALE 1" = 10' - 0"

SUBMITTED BY THE KID HIMSELF

SIX ROOM LEHIGH PORTLAND CEMENT HOME

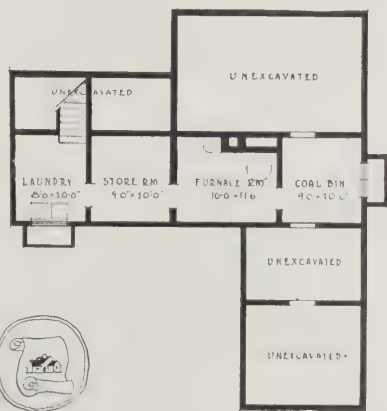
Second Prize Design, Class A
Submitted by H. A. Surman, Detroit



FIVE-ROOM LEHIGH PORTLAND CEMENT BUNGALOW

First Prize Design, Class B

Submitted by John Floyd Yewell and Harry Starr, New York



SUBMITTED BY

BASEMENT PLAN



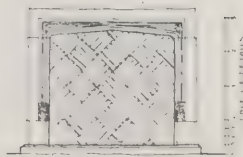
BASEMENT	41'0" x 11'6" x 7'0" = 3500.5
FRONT MASS	21'0" x 14'6" x 12'0" = 3654.0
CENTRAL MASS	25'0" x 22'6" x 15'6" = 7710.7
KITCHEN & DINING	18'0" x 18'6" x 12'6" = 4162.5
TOTAL CUBIC CONTENT	19,635

CUBAGE

FLOOR PLAN



EXTERIOR WALL SECTION



FIREPLACE



CHIMNEY DETAIL

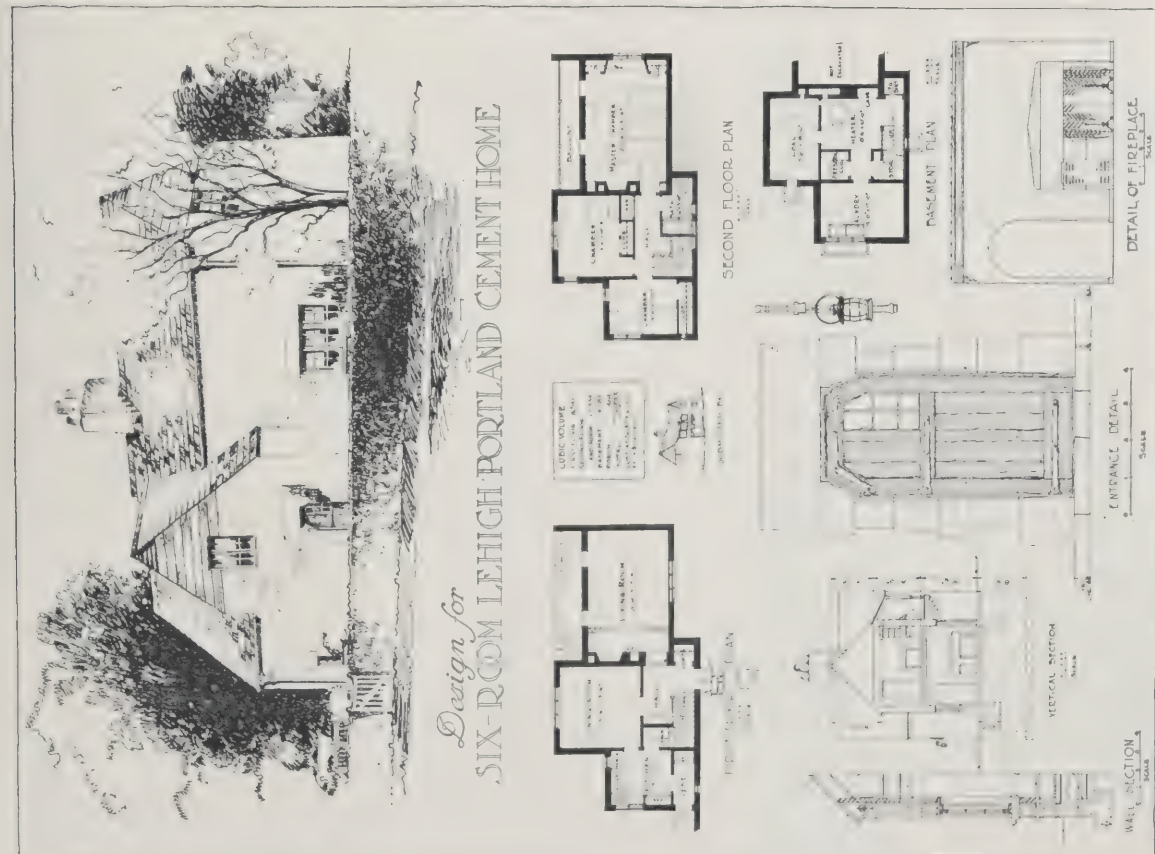


VERTICAL SECTION

Five Room Lehigh Portland Cement Bungalow

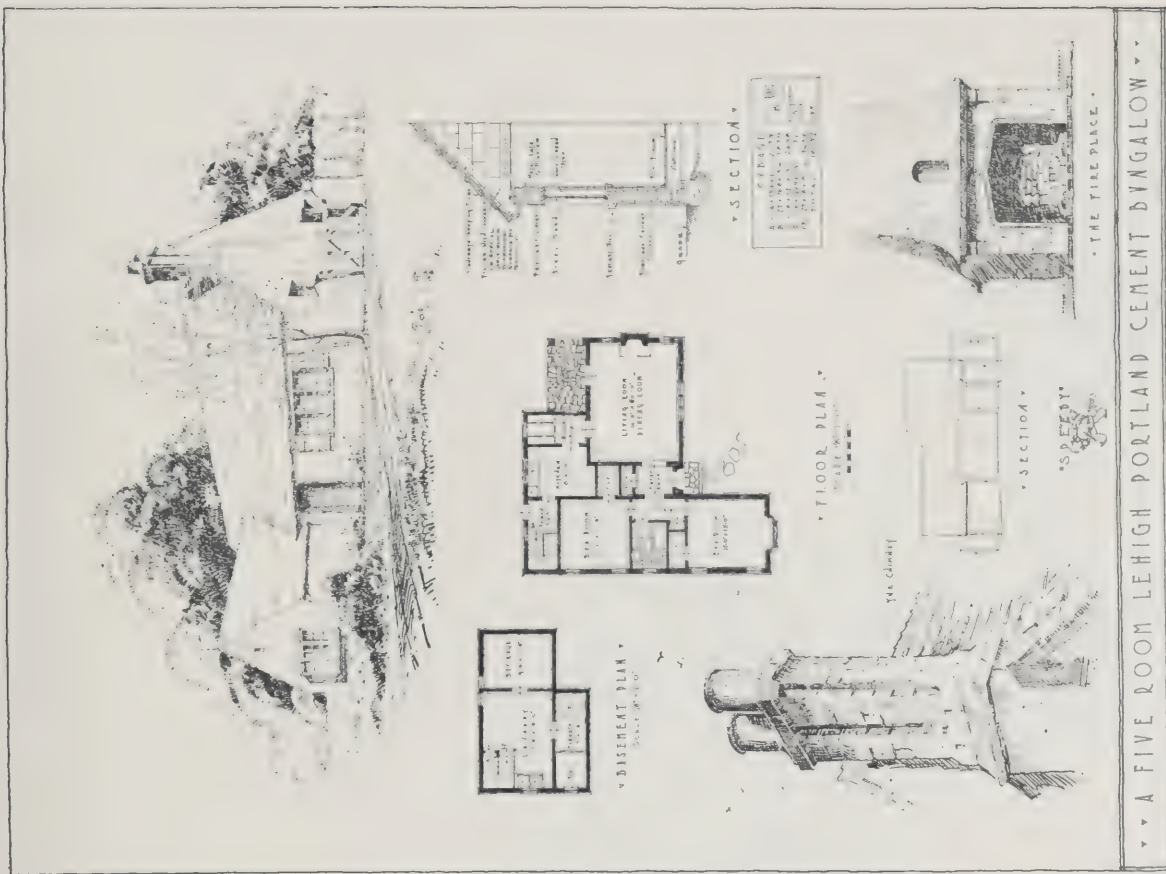
Second Prize Design, Class B

Submitted by Walter L. Moody, Santa Monica, Calif.



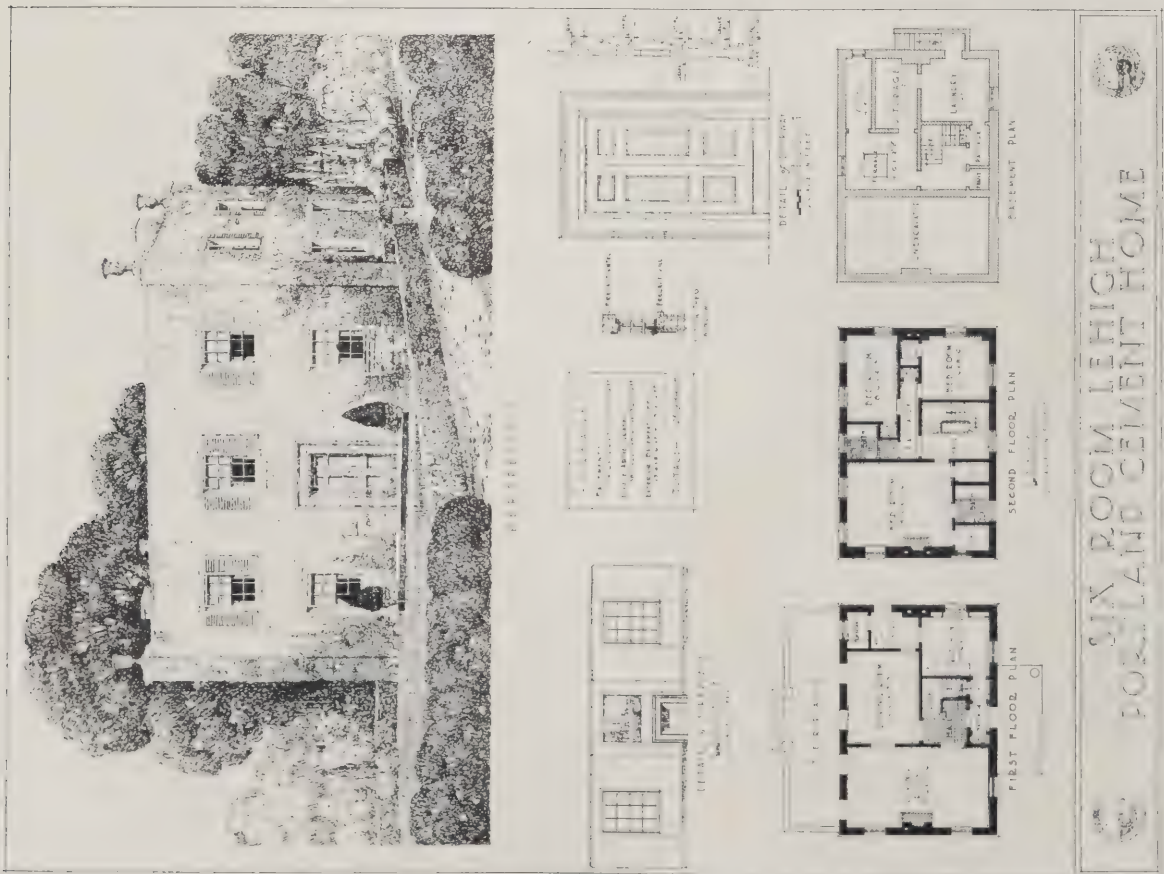
Third Prize Design, Class A

Submitted by Emil Backstrom and Herbert Magoon, New York

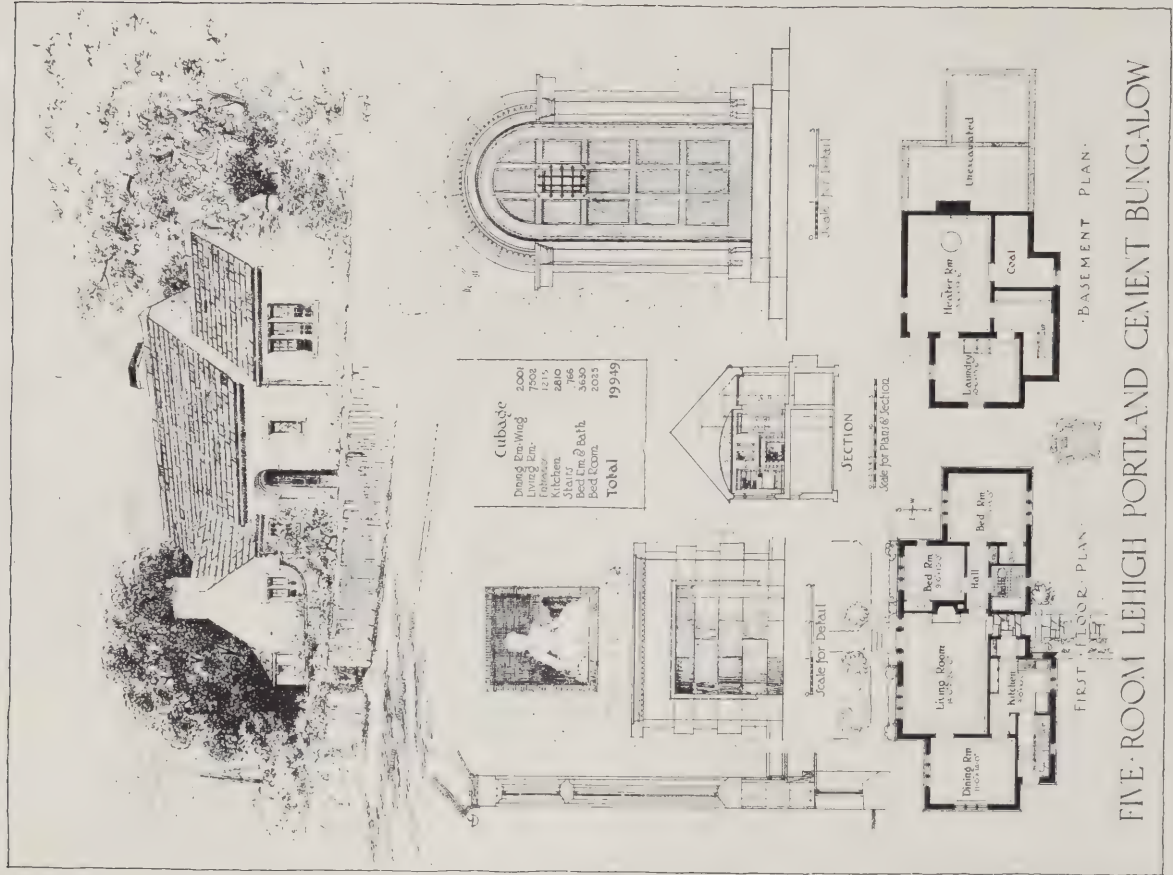


Third Prize Design, Class B

Submitted by Frederick H. Reimers, Oakland, Calif.



Fourth Prize Design, Class A
Submitted by Francis Keally, New York



Fourth Prize Design, Class B
Submitted by James N. Halden and Harold A. Rich, Boston

"Mediterranean" Architecture in Florida

By MATLACK PRICE

AS a result of the present great real estate and building activity in Florida, a good deal of interest has been directed toward the trend of architecture there,—and it is evident that there is noticeable a marked division as between popularity with the public on one hand and skepticism felt by architects on the other hand. As usual, the true measure of architectural merit in the new architecture of Florida lies somewhere between the public's enthusiasm and the architects' mental reservations. Certainly it is not all as good as many people, carried away by its novelty, think it is; nor is it as lacking in merit as many architects, disturbed by its novelty, feel constrained to say it is. It has merits and defects.

No real valuation can be placed on this Florida architecture without first definitely accepting its setting and the life of which it is a part. Florida is not a serious place. It is a region of winter

resorts, some gay and some restful; a place to which people come to escape from everything that reminds them of the North. It is a place of clear skies, of temperatures mild to semi-tropical; a place, in short, where architecture may well assume its least serious and most festive guise,—where, indeed, it *should* assume such a guise, if it is to be at all appropriate to its setting. It must assume a glad, gay, holiday garb.

The first architectural type that suggested itself as being suitable for such places as Florida and southern California was the Italian villa, and, later, the Spanish villa; and it is quite generally imagined that all houses in Florida even now *are* Spanish, although the architects there have gone much further, and developed a style that has already been given the name of "Mediterranean," as most appropriate.

While the predominating traits in these Mediterranean villas are unmistakably Spanish, the



In the Garden of "Villa Vizcaya," Cocoanut Grove
Paul Chalfin, Architect



Pool at "El Jardin," Residence of John Bindley, Cocoanut Grove, Fla.



Detail of Entrance, "El Jardin," Coconut Grove, Fla.
An adaptation of Plateresque ornament

designers have given themselves a still wider latitude in the direction of picturesque possibilities by adapting elements here and there from other lands about the shores of what used to be regarded as the "sea in the middle of the world,"—the old Mediterranean. Thus, from Italy, as well as from the French Riviera, they borrowed some of the characteristics of the smaller villas and farm buildings; from Spain, any details or mannerisms that served the purpose in hand, whether the origin was Castilian or Moorish; and along the north coast of Africa they discovered hitherto unused sources of architectural adaptations in the villas and city houses of Tunis and Algiers.

For reasons obscurely racial and geographic, there exists between or among these various styles a marked affinity, and this affinity has worked directly into the hands of the architects who are building in Florida today. Certain traits of the various Mediterranean types are common to all, such as the prevalence of stucco walls and tiled roofs in Italy, Spain and along the Riviera; and it is rather in matters of detail that variations occur. Italian ironwork, for example, differs from that of Spain and the Riviera. Spain contributes certain Moorish elements, together with certain of her own, such as polychromed woodwork and characteristic ironwork. Arcaded loggias and colonnades owe their inspiration to Italy. In the matter of profiles, the tall gabled masses with slightly pitched tiled roofs are characteristic of the Riviera as well as of Spain and Italy. From north Africa more, no doubt, will be adapted than has so



A One-Story House at Coral Gables, Fla., Roofed with Old Spanish Tiles

far appeared, for there is much that can be blended into the design of the more familiar Spanish and Italian houses, and which would add to the interest.

One of the houses at Coral Gables, at Miami, shows the result of adapting the style of buildings in Algiers, and the adapting has been excellently done. At the same place a small inn has been built in a manner definitely Moorish, and in view of the great difficulty and frequent failure attendant upon designing anything Moorish, I think this adventure was remarkably successful. There were, of course, many enforced compromises, but scale was well maintained throughout, and the patio, with its wooden gallery at the second floor and the double arcade of Moorish arches screening its fourth side, is an excellent bit of design in an admittedly difficult style.

At Palm Beach the architectural style is rather "set," as compared with the more adventuresome work that is being done at Miami. There are a number of more serious Italian villas at Palm Beach and, more recently, some consistent Spanish villas. The Gulf Stream Golf Club on the Ocean Boulevard between Palm Beach and Miami is one of the most attractive informal Spanish-Italian adaptations that I know of in this country. It has decided charm.

At Miami, as representing the more formal trend of architecture there, no architect is likely to forget the great Deering villa, which is entirely Italian in its manner. Architecturally there is little to be said about it that has not already been said, but it is interesting to see and record how this type of house ages



Details of an Entrance Facade, Coral Gables, Fla.
An excellent use of textured stucco



The Coral Gables Inn; a Moorish Adaptation
M. L. Hampden, Architect



A House Designed on Algerian Precedent
Walter di Garmo, Architect

in this country. When I went through the house and its great gardens, both had been closed for the summer, and the illusion of real antiquity in this house that is not quite ten years old was remarkable. In the grounds some part of this illusion came from the real antiquity of virtually all the garden sculpture; but discounting this there was a sense of exploring an ancient villa, and this was due to the interesting discolorations of the stucco work, and especially of the coral rock. This rock, of an open, porous structure, possesses some look of age even when it is freshly quarried, and as it has now acquired rust stains and weather stains, it seems to have been touched by the hand of the centuries. The grottoes under one of the terraces, largely made of coral rock, seemed indeed to have been there since the Renaissance, and I photographed one of them, as I have always believed them to represent as excellent an expression of Baroque as anything that has been done in this country. Another imposing villa at Cocoanut Grove, not far from the Deering villa and not quite so well done, is "El Jardin," in mass suggesting an Italian villa, but detailed in the Plateresque manner of the Spanish Renaissance. It will improve very much with age, that softening agency which has dealt so effectively with the old villas of Italy, giving them much of their charm.

Across Biscayne Bay from Miami lies the long white key that is Miami Beach, marked architecturally by its two great hotels and a great many villas, both large and small. The profile of the Flamingo



General View of House Shown at Upper Left Hand Corner of This Page
Walter di Garmo, Architect

Hotel (and very interesting it is) is almost too familiar to call for special comment here. The newer of the two hotels, the Nautilus, is interestingly detailed in a modified Baroque version of Spanish Renaissance, with some Plateresque passages here and there. Of the villas, some are typically Spanish and others, of more recent design, are in the new Mediterranean manner, with picturesquely unexpected profiles, outside stairways, old patios and polychromed exterior woodwork. If there was ever a real opportunity for architects to legitimately indulge in a little play, it is in Florida—and especially in and about Miami, which might be called a playground for winter visitors from everywhere.

Undoubtedly the most notable contribution to the development of the Mediterranean style, in villas, bungalows, and in larger buildings as well, is being made at Coral Gables, the 4,000-acre suburb of Miami. Here is an entire city being planned and carried out under a definitely appointed architectural supervision, and the result is highly consistent and remarkably interesting. The buildings at Coral Gables comprise not only villas and bungalows, but apartment houses, hotels, churches, schools, a bank and post office, country clubs and a number of industrial buildings. The roadways converge on spacious circular plazas, which are architecturally treated with the most picturesque sort of Spanish gateways, pergolas and wall fountains. The houses display an infinite variety of profile, though all are based in design on the Mediterranean composite of styles, and all are consistent in material and general technique.



Window with Grille in Spanish Fashion, Coral Gables
An excellent use of simple ironwork



A Building Typical of What Has Come to Be Known as the "Mediterranean Style," Coral Gables



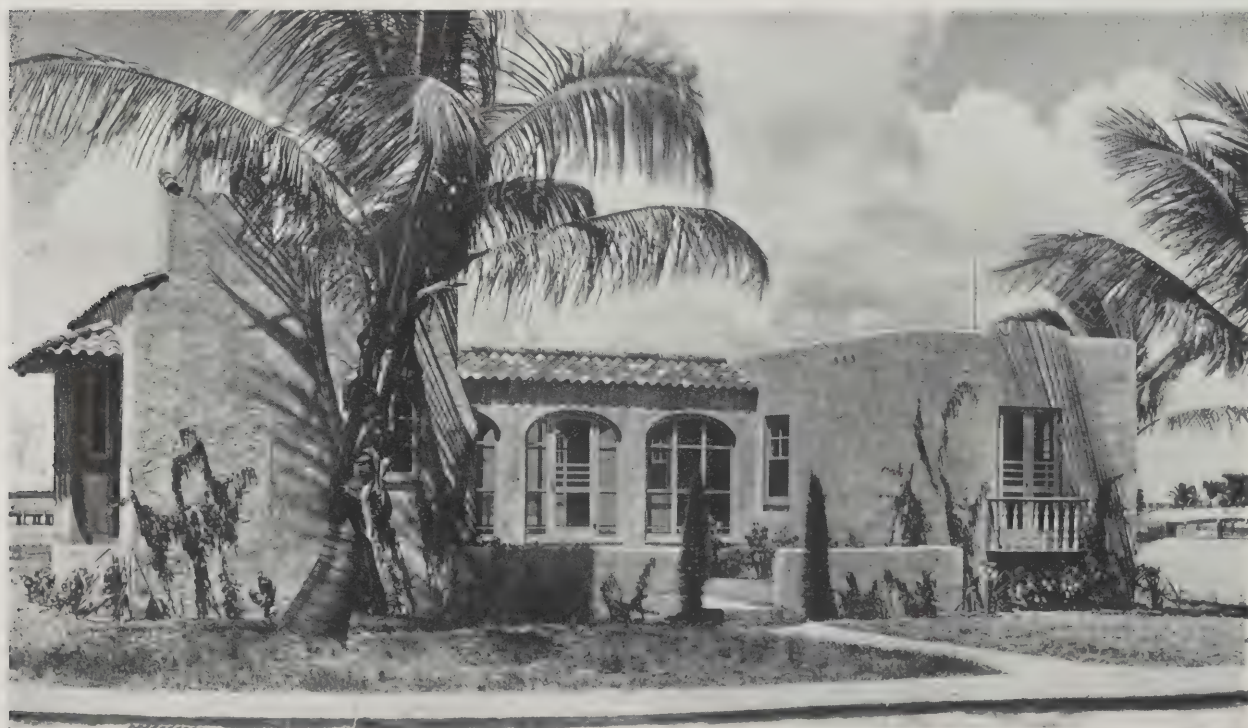
A Garden Grotto at "Villa Vizcaya"
Paul Chalfin, Architect



At the Entrance to "Villa Vizcaya"
Paul Chalfin, Architect

At Coral Gables restrictions require that all houses be built of coral rock or finished in stucco, or combined stucco with coral rock. This coral rock, and another local stone called "Ojus," afford the initial advantage of apparent antiquity in picturesque design. Tinted stucco combined with coral or Ojus

rock gives at once the effect of age-old buildings, and to heighten the effect, Coral Gables has been very fortunate in securing great quantities of old Spanish roof tiles from Cuba. In the matter of coloring the stucco a great deal of experimental work has been done, and the mixing of pigments to achieve



A Small "Mediterranean Type" Villa at Miami Beach, Fla.



A Polychromed Wood Grille, Coral Gables



Some Details of Garden Architecture; "Villa Vizcaya"

harmonious effects is in the province of the art director. The new Miami-Biltmore Country Club and Hotel, a very important group, are being built from the designs of Schultze & Weaver of New York, who are also the architects of the Nautilus Hotel at Miami Beach and a building for the use of

a Miami newspaper owned by ex-Governor Cox.

Inevitably, the architectural liberty effectively and picturesquely expressed by the intelligent architects of Miami is being mistaken for license by the unintelligent, and by the many speculative contractors and builders who are putting up hastily constructed



One of Several "Mediterranean Type" Residences at Coral Gables

bungalows and small apartments. The result, as in southern California, is appalling, for without some understanding of the several Mediterranean types it is impossible to hope for anything that is even architecturally possible. And just before the beginning of the vogue for Spanish and Mediterranean houses, people in Miami built a good many of that particularly un-architectural type popularly known as the "California bungalow," which is the bane of the Pacific coast. Obviously, however, we must discount these, and look for promise in the architectural future of Florida rather in the really interesting and picturesque houses that are being designed in the Mediterranean blend of styles, as well as in the more studious and pure style versions of the Spanish and Italian Renaissance, several examples of which exist.

The architectural opportunity is unique, and there



Detail of Terrace, Hotel Nautilus, an Adaptation of the Plateresque
Schultze & Weaver, Architects

can be no fair or adequate criticism of what is being done in Florida, and especially in Miami, without a first-hand observation of the place and its life, and of the particular architectural needs and the tastes which the newer Florida villas are being designed to meet.

The unprecedented growth and real estate boom of Palm Beach and Miami are not restricted to the eastern shore of Florida. Such places as Orlando and St. Petersburg are experiencing a similar, although smaller, boom. The use of Mediterranean precedents for the recent architectural work at Palm Beach, Coral Gables, and Miami is also found in some of the newer hotels and houses of the other cen-

tral and southern Florida resorts. Florida has indeed become, to a greater extent than ever before, the playground of this country, where the social aristocracy and ambitious *nouveau riche* meet together.



A Typical House at Coral Gables; Built of Stuccoed Tile and Coral Rock

The George Nixon Black House, Ellsworth, Me.

By MARGARET O. GOLDSMITH

WITH bricks from Philadelphia and workmen from Boston, Colonel John Black started to build his ten-room house at Ellsworth, Maine, on the estate known as "Woodlawn," given to Mrs. Black by her father. In 1805 the house was completed. Changes either in structure or in furnishings have been so few that today, in the ownership of the builder's grandson, George Nixon Black, it stands intact as a good example of an early federal homestead of the more luxurious type. Few structures of this period still existing illustrate more clearly the strong hold upon America gained by the restrained, refined architecture which characterized the early years of the nineteenth cen-

ture,—a type founded partly upon fashions current in England and partly due to the contact with France which followed the Revolution and which endured for a half-century thereafter. In America all this assumed the form of a delicate, graceful classicism, —occasionally a trifle "thin," but as a rule developed at a scale which gave it sufficient robustness to render the type so enduringly satisfying that it has never ceased to be charming. The type is as alluring as it was a century ago.

The exterior composition reveals a rectangular one-story wing at each end of the main two-story structure, a survival of pre-Revolutionary building style. But the disposition of rooms, and especially



Front, The George Nixon Black House, Ellsworth, Me.



THE GEORGE NIXON BLACK HOUSE; VIEW SHOWING FRONT AND WEST WING



LIVING ROOM, THE GEORGE NIXON BLACK HOUSE



Hall and Stairway, the George Nixon Black House

the plan of the hall, show the tendency of the times toward greater flexibility and privacy. Instead of a long hall with stairway running through the center of the house, we find that the front door in the left wing leads into a small entrance hall, and that access to the stairs and to the parlor and dining room is not to be had until one had passed farther into the main hall back of these two front rooms. This main hall has the slightly elliptical shape, with circular stairs around an open well, favored by Bulfinch in Boston and by Jefferson in Virginia—a type stately indeed.

Domestic architecture today offers no better plan for so separating the stairs from the entrance hall and for throwing the entire front of the main house, commanding a magnificent view, into the two main living rooms. The special needs of the original owners were otherwise provided for; offices of the estate were located in the left wing next the entrance hall; the kitchen, known as the "middle kitchen," was in the right wing, and other service rooms in an ell at the rear. Proportions are admirable. The main house is 49 by 41; wings are 24 feet, 6 inches by 22 feet, 9 inches; the hall is 20 feet by 18 feet,—sufficiently large for a rather formal type.

The interior architectural style can be judged from the illustration of the hall seen through the parlor doorway. The sweeping curve of the stairs, rising in easy treads, is carried into the lines of the baseboard, which in this house is all that survives

of the paneled wainscoting of an earlier period. William Pain's "Practical House Carpenter," republished in Philadelphia in 1797, contains plans for such stairs and the spiral terminal for the rail. The cut work of the risers in classic scroll design is typical. The ornament is in the period's best taste.

Among the distinctly Republican features of the exterior are to be noted the low, almost invisible hipped roof, contrasting with the bold height of the chimneys, six in number. The eaves balustrade shows the tendency for formal architectonic design in the combination of long solid panels broken by short stretches of Classic balusters over the windows. The earlier balustrades were a succession of balusters with square, paneled, corner posts.

In the matter of window and door openings, this house is typical of other brick houses of the time. Frames are small in scale and are set in from the wall surface. Sashbars are narrow. Plain lintels of local marble offset the rich texture of the small bricks laid in Flemish bond. The porch windows in three sashes extend to floor level, as in Bulfinch's Boston houses—several on Beacon Hill—of a similar style.

The outstanding feature of the facade and likewise the most interesting classic innovation exemplified in the house is the one-story porch, four bays deep, extending across the entire front. Jefferson was among the first to realize the impressive possibilities of the long porch gallery, here worked out more in the spirit of McIntyre's excellent entrance porticos.

There is the same freedom in combining different orders which is seen in Salem houses—Corinthian cornice modillions, Ionic volutes, plain and well proportioned shafts, and the double torus of the Corinthian pedestal. The simple entablature, with its pleasing mouldings, contrasts with the refinement of the beautiful porch balustrade, which is made up of sheaf motifs, instead of the usual lattice work. In keeping with the unity of the entire facade are the square posts of this porch balustrade, located over each column and in line with the open stretches of the eaves balustrade. The repetition of the sheaf design for the balustrade of the wings, but on a larger scale, emphasizes the horizontal lines of the composition as a whole. One notes the difference in scale between the modillions of the porch cornice and the eaves cornice as an instance of the early Republican builder's ability to handle wood out of doors, with due regard for its values of light and shade and with sympathetic understanding of scale.

In its setting of stately elms and smoothly clipped lawn, the house carries an effect of breadth and restraint. It recalls the post-Revolutionary era of tranquil dignity, which appropriated Greek forms of architecture, sometimes successfully and sometimes not, because of an inner kinship with the civilization that had evolved them. It is rare to find well preserved a homestead which so faithfully represents the type of houses built by prosperous citizens during the earlier days of the nation's life.

Some Spanish and Italian Details

By ISIDOR RICHMOND AND EUGENE T. KENNEDY

THE wide popularity of the early Spanish and Italian architectural styles is due partly to the fact that they may often be adapted for modern buildings at comparatively moderate cost, and partly also to the fact that they involve the use of detail which is almost invariably pleasing. The examples illustrated here, of which measured drawings are included, qualify in both of these respects. The "Granite Doorway in Avila" forms the main entrance to the well known "Domus Misericordie." The door proper, arranged in two folds, is flanked by two engaged columns which support a simple entablature, above which is placed a bas-relief showing St. Martin dividing his cloak with a beggar. Nothing could be simpler than this use of well known architectural motifs, and yet the entrance possesses dignity and

distinction lacking in many a more elaborate design. It has formed the basis of several modern doors.

The "Casa de Dona Maria Le Brava, Salamanca," exhibits a strikingly successful use of voussoirs in its low, arched door. It owes much also to the band of ornament in relief which frames the small wrought iron balcony, the window, and the panel of carving which are placed just above the door. Added dignity is conferred upon this highly satisfying facade by the low roof of tile overhanging the narrow cornice below, and yet the design makes use of little or nothing which could not be executed in terra cotta or cast stone. The third detail, the "Side Door of the Church of St. Chrysogono, Rome," shows an interesting use of columns supporting a broken pediment, in which is placed an ornament somewhat resembling a cartouche.



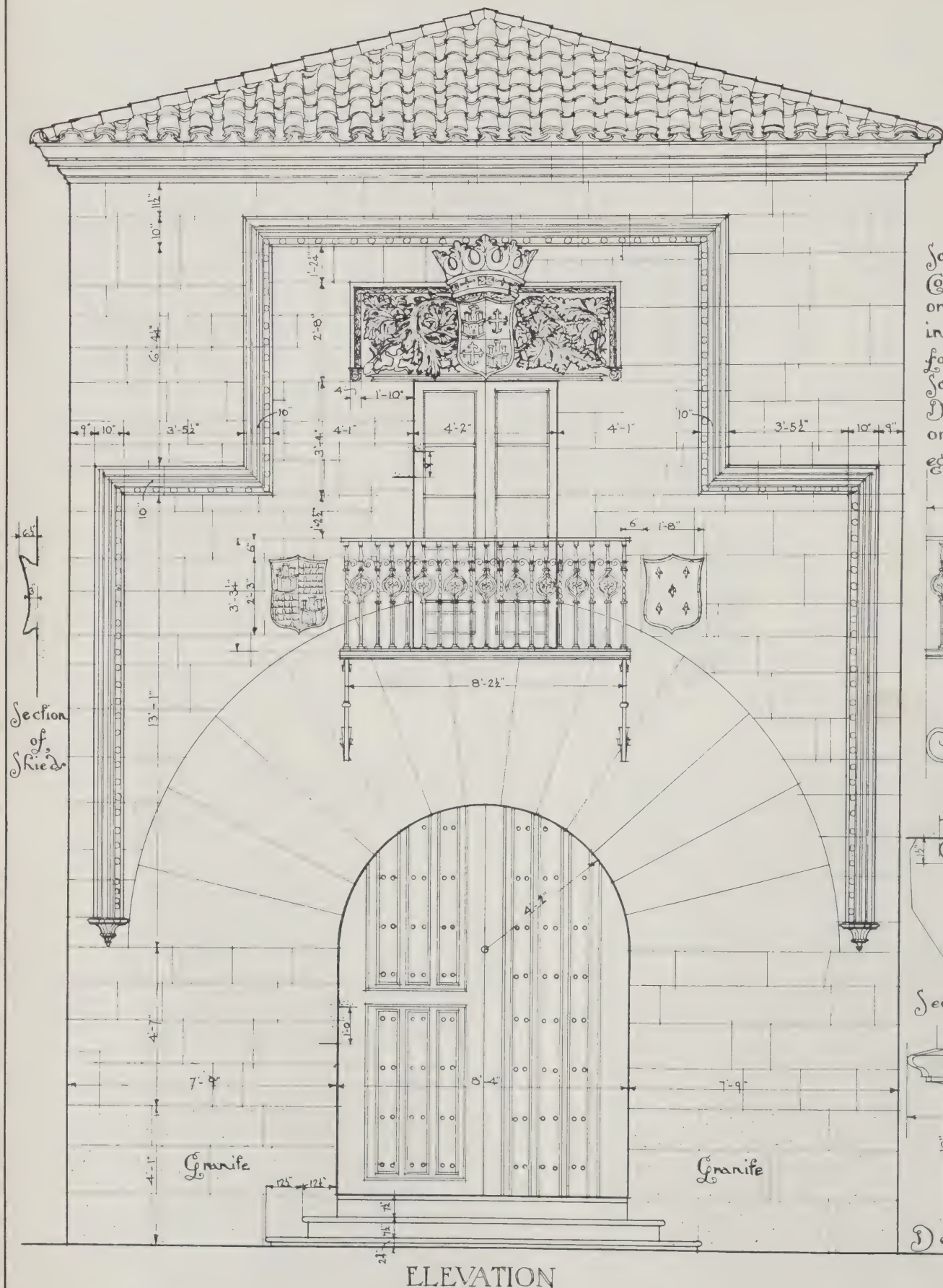
Facade, Casa de Dona Maria la Brava, Salamanca



Detail, Granite Doorway in Avila



Side Door, Church of St. Chrysogono, Rome

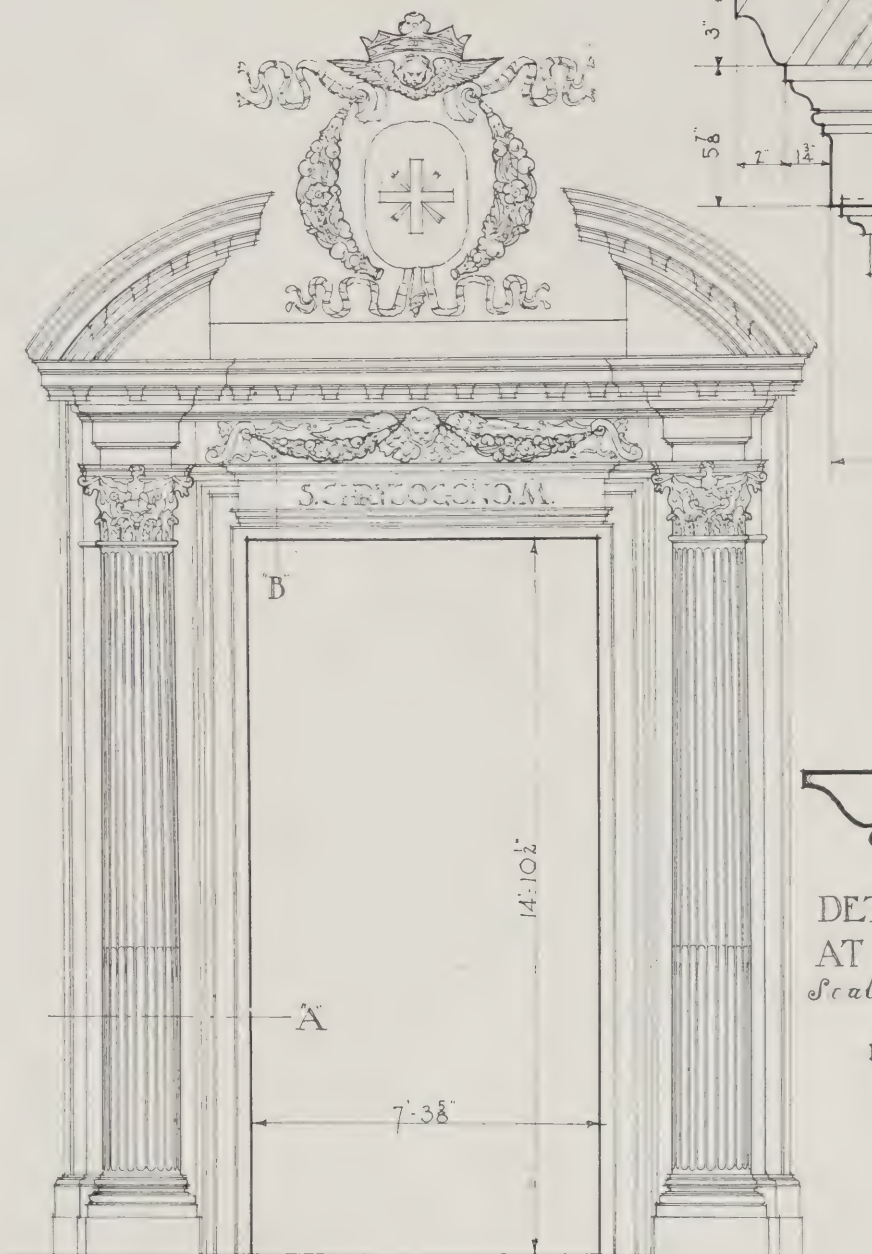


Scale of Label and Corbel Details is one and one half inches equal one foot
 Scale of other Drawings is: one quarter inch equals one foot

Spanish
Details

CASA DE DOÑA MARIA LA BRAVA
SALAMANCA

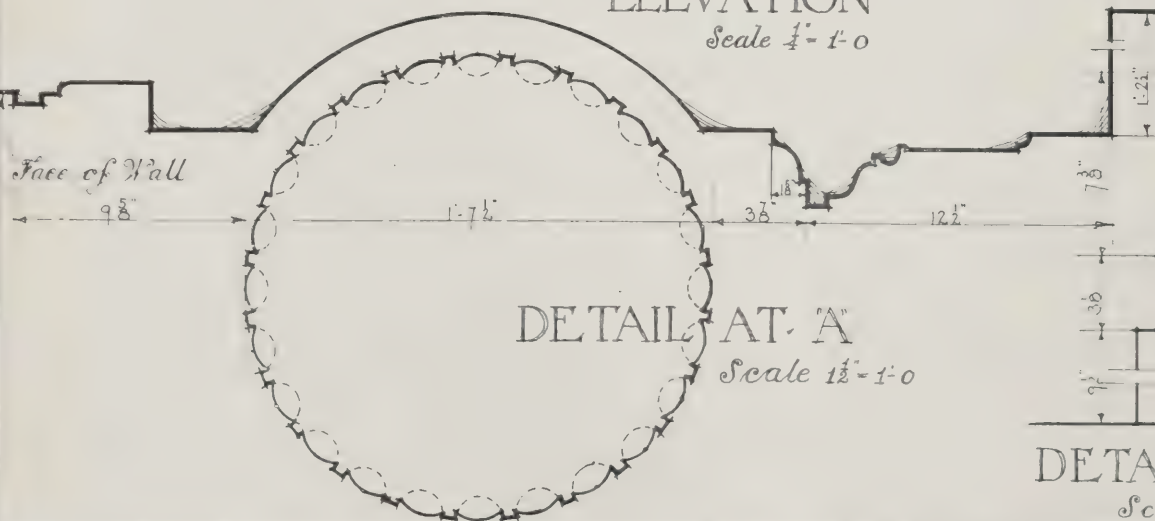
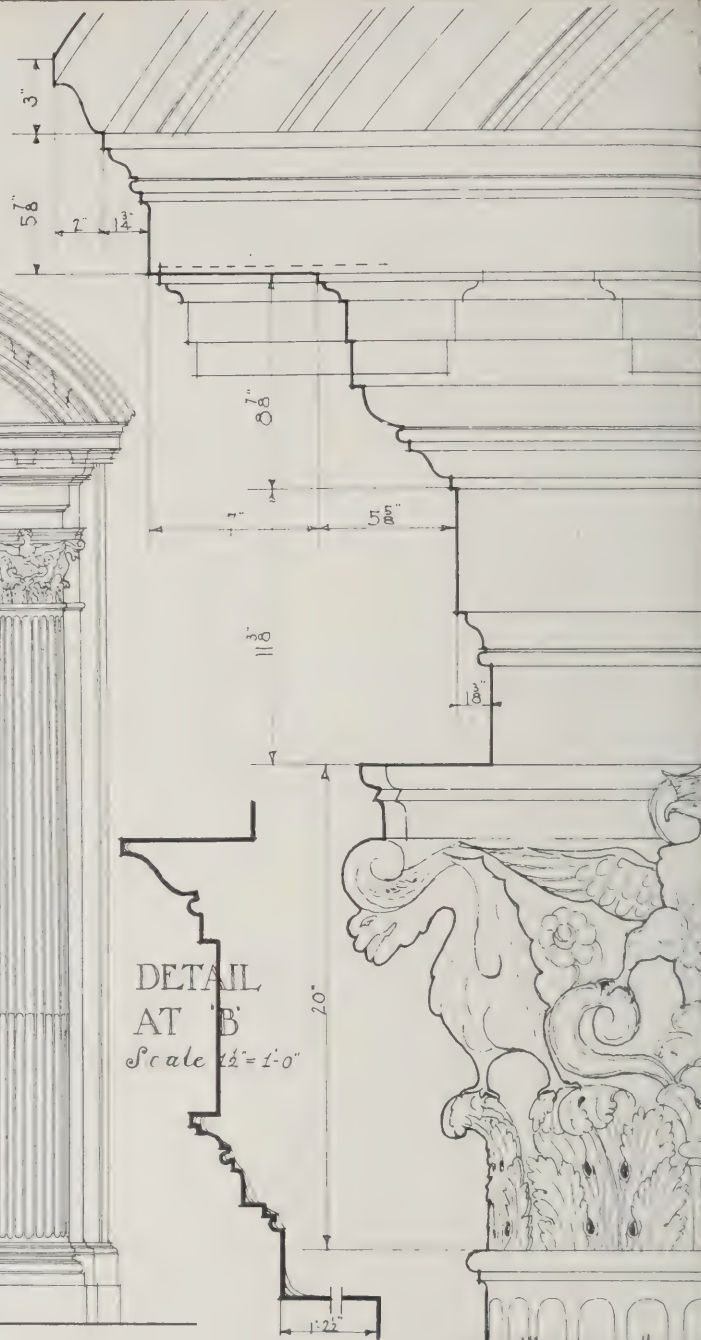
Measured & Drawn
by E. J. Richmond
& Eugene E. Kennedy
Roth Travelling Scholars



ELEVATION

Scale $\frac{1}{4}$ " = 1'-0"

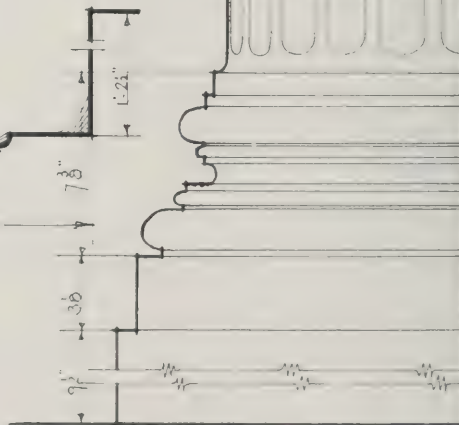
DETAIL
AT 'B'
Scale $\frac{1}{2}$ " = 1'-0"



DETAIL AT 'A'
Scale $1\frac{1}{2}$ " = 1'-0"

DETAIL OF ORDER

Scale $1\frac{1}{2}$ " = 1'-0"



Italian
Renaissance
Details

SIDE DOOR
CHVRCH OF ST. CHRYSOGONO, ROME

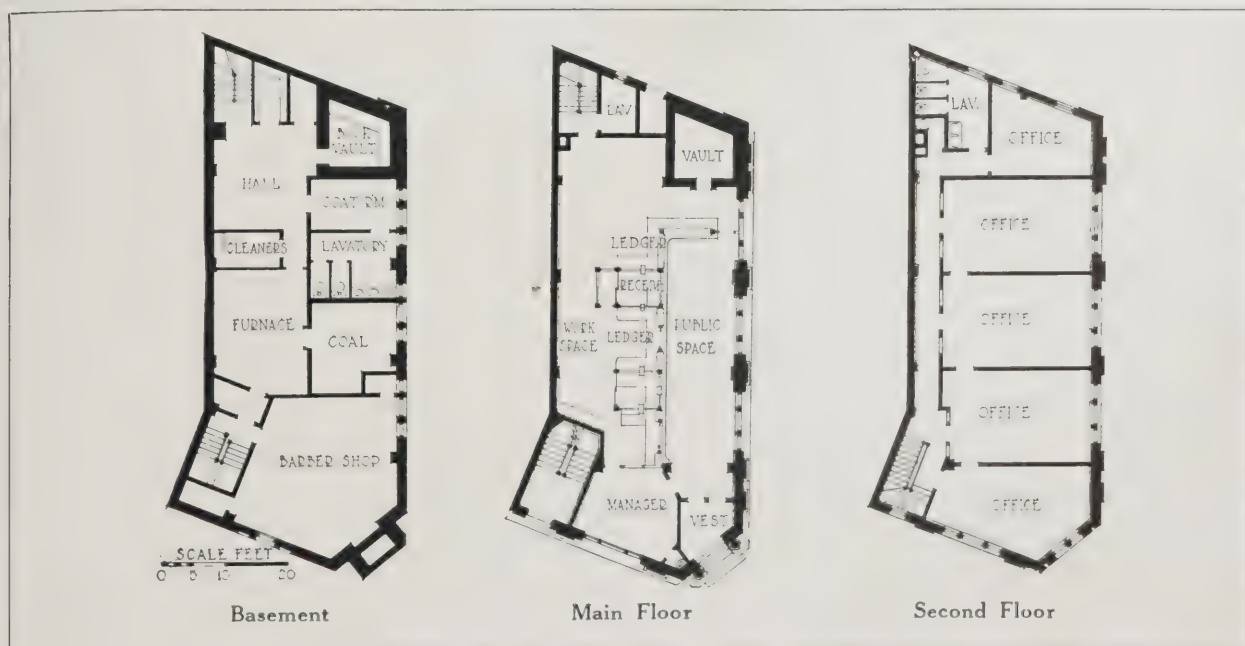
Measured & Drawn
by Isidor Richmond
38th Retch Travel-
ling Scholar



BRANCH OF THE BANK OF MONTREAL, MONTREAL
PHILIP J. TURNER, ARCHITECT

ONE of the branches of the Bank of Montreal occupies an interesting three-story building located at the corner of St. Lawrence and Ontario Streets, Montreal. This building was formerly occupied by the Molson's Bank. As the lot was exceed-

ingly irregular in shape, the problem of erecting a practical and conveniently planned bank on this site involved much care and study. Fortunately, the main facade on Ontario Street could be worked out in a balanced design of three arches, separated and termi-



FORUM SPECIFICATION AND DATA SHEET—80

A Branch of the Bank of Montreal, Montreal; Philip J. Turner, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Concrete piles and concrete frame and floors; fireproof construction. Terra cotta partitions.

EXTERIOR MATERIALS:

Indiana limestone and stone base.

ROOF:

Pitch and gravel.

WINDOWS:

Metal frames, and wood sashes top floor.

FLOORS:

Birch hardwood upper floors. Tile floor with marble base in public space, ground floor.

HEATING:

Steam (low pressure).

PLUMBING:

Enameled iron fixtures.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR WALL FINISH:

Plaster.

INTERIOR MILL WORK

Quartered white oak.

DECORATIVE TREATMENT:

Walls tinted. Woodwork wax finish.

APPROXIMATE CUBIC FOOTAGE:

143,206.

COST PER CUBIC FOOT:

37 $\frac{3}{4}$ cents.

DATE OF COMPLETION:

May, 1915.

nated by flat pilasters. As the main wall itself is slightly rusticated, these plain, flat pilasters contrast pleasantly with the sharp joint lines of the walls and give adequate support to the simplified entablature, above which is a low attic crowned by a much heavier entablature with modillion cornice and parapet. The triple windows of this attic are properly placed above the arched openings below, and are sufficiently small in scale to emphasize rather than detract from the importance of the large arched windows, which extend through two stories of the building. The main entrance is placed at the corner, which is cut off to avoid the sharp angle which would have oc-

curred had the Ontario and St. Lawrence Street facades come together at the corner of the building.

In the case of this particular bank it was desirable from a business point of view to locate the entrance at the junction of the two important streets. In order to make the public space as accessible as possible from the entrance, the best lighted portion of the banking floor was devoted to the use of the public. The short facade on St. Lawrence Street is broken by a single arch lighting the manager's office on the main floor and one of the five private offices on the second floor. The various angles made by the irregular-shaped plan are very successfully utilized.



View of Interior



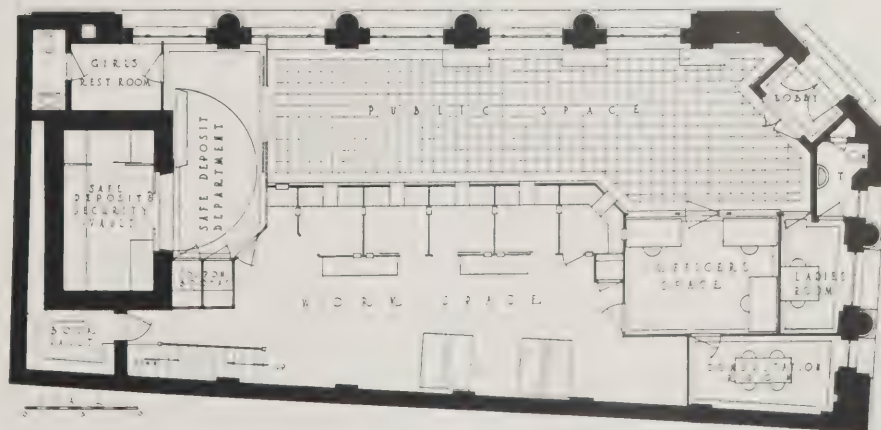
Detail of Entrance



FIRST NATIONAL BANK OF TENAFLY, N. J.
HOLMES & WINSLOW, ARCHITECTS

ANOTHER small bank, very similar in its plan to the branch of the Bank of Montreal, is the First National Bank of Tenaflly, N. J. An almost rectangular corner lot, slightly irregular in shape, was selected for the location of the building. To emphasize the importance of the entrance without breaking either of the street facades, the intersection of the two was cut off, making a small corner facade, in the center of which the entrance door with a square window above, was placed. The

design of the two street facades, executed in cast stone, shows a free use of Italian Renaissance precedent. Engaged columns emphasize and flank the tall window openings on each facade. Decorative wall panels near the top of the walls repeat the elaborate detail of the column capitals, which support a heavy entablature and crowning parapet. As in the branch Bank of Montreal, the public space is here located on the principal street front of the building. Small panes of glass give scale to and pleasantly break up



Main Floor

FORUM SPECIFICATION AND DATA SHEET—81

First National Bank of Tenaflly, N. J.; Holmes & Winslow, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Semi-fireproof; first floor, concrete slabs and beams; roof, wood beams.

EXTERIOR MATERIALS:

Cast stone on streets; brick on rear.

ROOF:

Tar and gravel.

WINDOWS:

Pivoted steel.

FLOORS:

Terrazzo and linoleum-covered cement.

HEATING:

Vapor.

PLUMBING:

Enameled iron fixtures.

ELECTRICAL EQUIPMENT:

Lighting, vault and raid protection.

INTERIOR MILL WORK:

Mahogany, birch and whitewood.

INTERIOR WALL FINISH:

Ornamental plaster, pilasters and cornice.

DECORATIVE TREATMENT:

Plaster, painted.

COUNTER SCREEN:

Marble and wood; wood counters and pedestals.

APPROXIMATE CUBIC FOOTAGE:

92,000.

COST PER CUBIC FOOT:

78 cents.

DATE OF COMPLETION:

March, 1923.

the tall, square topped windows. It is rather a pity that it was not possible to use bronze doors, divided into panels in keeping with the scale of the division of the windows, for the main entrance to the bank. This entrance has an entablature supported on brackets, the entablature carrying a clock flanked by gracefully carved scrolls and ornaments possessing the same refinement of detail shown in the panels located near the top of each pier or wall surface.

Simplicity of treatment and refinement of detail also characterize the design of the banking room it-

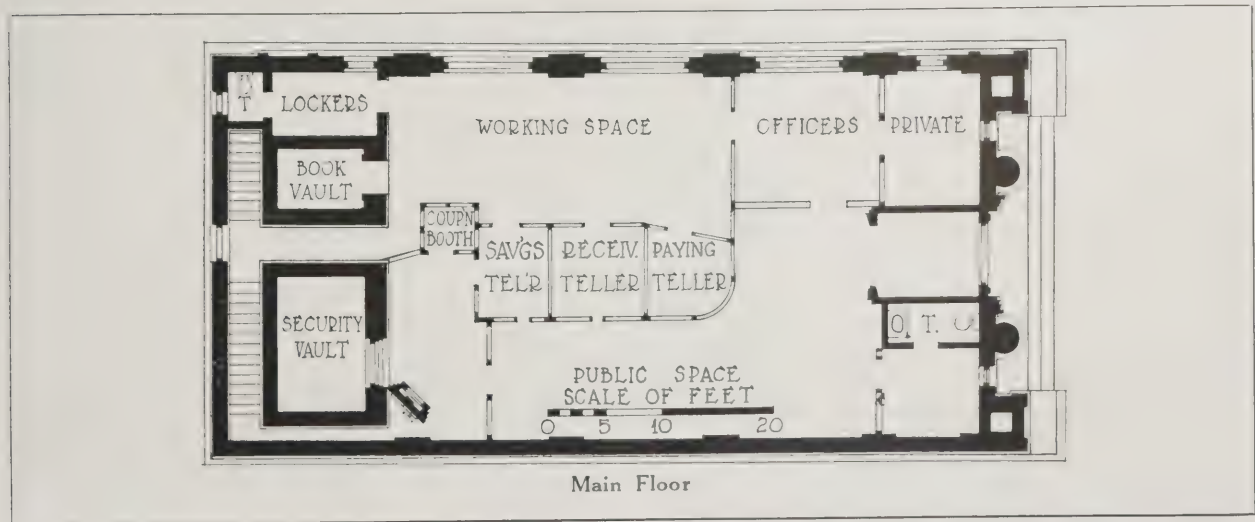
self. The terrazzo floors and painted plaster walls give pleasing contrast to the marble counter rail with its wood and glass screen above. At the center of the rear end of the banking room is located the safe deposit and security vault, on one side of which is a small book vault and on the other a women employees' rest room. A room for women customers with connecting lavatory is located at the left of the main entrance, beyond which is the space for the desks of the officers of the bank, connecting with a small consultation room at the rear, useful for many purposes.



The Public Space



FIRST NATIONAL BANK, ST. JOHNSTVILLE, N. Y.
DENNISON & HIRONS, ARCHITECTS



FORUM SPECIFICATION AND DATA SHEET—82

First National Bank, St. Johnsville, N. Y.; Dennison & Hiron, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

All bearing walls—concrete in cellar and brick in upper portion. All brick walls furred; combination terra cotta block and concrete long span construction for first floor.

EXTERIOR MATERIALS:

Selected brick trimmed with limestone for two street fronts.

ROOF:

Composition.

WINDOWS:

Steel industrial type for banking room; elsewhere, wood.

FLOORS:

Marble in public space. Cement in cellar, and elsewhere, wood.

HEATING:

Low pressure, one-pipe steam.

PLUMBING AND ELECTRICAL WORK:

First class and of type suitable for this class of building.

INTERIOR WALL FINISH:

Sand-finished plaster.

INTERIOR MILL WORK:

Birch, stained, varnished and rubbed.

DECORATIVE TREATMENT:

Simple, flat tone paint on plaster walls.

COUNTER SCREEN:

Marble base to counter and bronze top screen.

APPROXIMATE CUBIC FOOTAGE:

100,000.

COST PER CUBIC FOOT:

27 $\frac{3}{4}$ cents, exclusive of equipment. 40 cents, including equipment.

YEAR OF COMPLETION:

1914.

FOR a bank in a country town, the use of brick and limestone with terra cotta trimmings seems wise. In the First National Bank at St. Johnsville, N. Y., these materials have been pleasingly combined in a simple adaptation of Classic architecture, in character rather more Greek than Roman, perhaps. The deeply recessed front makes possible the use of two engaged limestone columns with simplified Corinthian capitals. Two heavy brick piers at the corners are paneled, repeating in character the detail and effect of the wall pilasters on the side street facade. The frieze of the high Classic entablature is filled in with brick except where the name of the bank is inserted in limestone slabs over the entrance door. It is a question whether this entablature would not be more effective had the frieze course been terra cotta like the other members of the entablature. A high brick attic capped with terra cotta crowns the entire building. Small panes of glass add scale and simplicity to the three high window openings on the side street facade and the entrance transom.

The plan of the banking room is well worked out for the convenience of both public and employes. As is the case in most of the banks designed by Dennison & Hiron, the working space is located next to the windows or on the outer side of the banking room, where direct light is obtainable. The public area occupies the inner portion of the banking floor next to the wall. A women's room and lavatory are located at the left of the entrance door, and a private office at the right. Beyond the private office is an open space

for the accommodation of the officers of the bank. The vaults and employes' locker room are located, as usual, at the rear of the banking room floor. In this bank the tellers' cages are conveniently placed between the working space and the area used by the public, while the coupon booth is made part of the enclosure about the securities vault and the cages.



Facade, Side Street



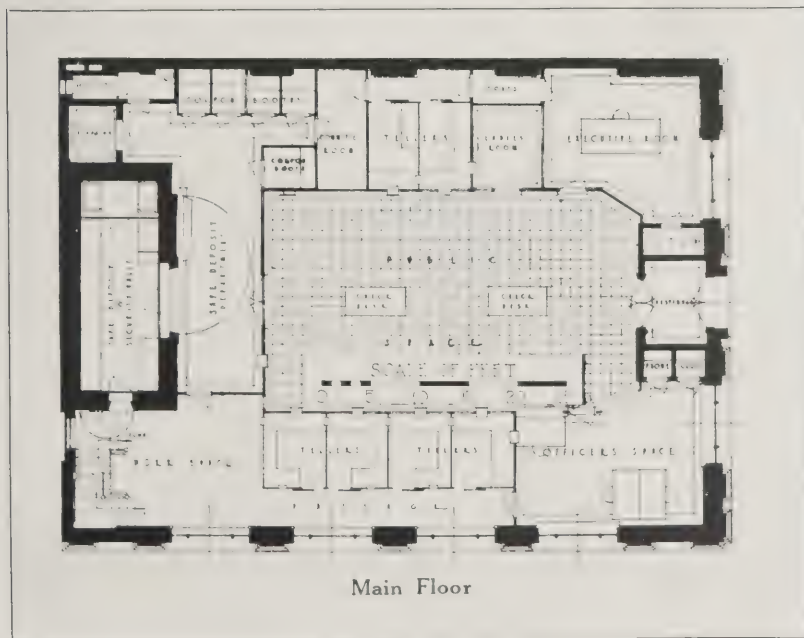
BERKSHIRE LOAN & TRUST COMPANY, PITTSFIELD, MASS.

HOLMES & WINSLOW, ARCHITECTS

A DECIDED variation in the design of small city banks is found in this building of the Berkshire Loan & Trust Company. Built of white marble, the tall fluted Corinthian pilasters successfully tie together the two-story design of the facade in which

tall arched windows indicate the banking room on the main floor, and coupled double-hung windows the offices on the second floor. There is a straightforward simplicity and dignity about the exterior design that is worthy of note as well as emulation.

Except for the simplified Corinthian capitals of the pilasters, the rosettes, modillions and carved members of the entablature, the building is devoid of architectural ornament. In plan the banking room floor is arranged with the public space in the center, as the building is sufficiently wide to permit ample working area on each side of the floor. The entrance door is located in the middle arch of the end or narrow facade of the building. The use of four instead of three or five arches in the side facade seems rather unfortunate, but it was doubtless necessitated by the lack of room for five arches and the advisability of introducing as many arched openings as possible in order to more adequately light the interior. Doubling the pilasters at the corners of the



FORUM SPECIFICATION AND DATA SHEET—83

Berkshire Loan & Trust Company, Pittsfield, Mass.; Holmes & Winslow, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Fireproof; steel beams and concrete slabs.

EXTERIOR MATERIALS:

Marble on streets; brick on rear.

ROOF:

Tar and gravel.

WINDOWS:

Pivoted steel.

FLOORS:

Marble and cork-covered cement.

HEATING:

Vapor.

PLUMBING:

Enameled iron fixtures.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

Mahogany and whitewood.

INTERIOR WALL FINISH:

Caen stone finish.

DECORATIVE TREATMENT:

Plaster, painted.

COUNTER SCREEN:

Marble and bronze.

APPROXIMATE CUBIC FOOTAGE:

166,000.

COST PER CUBIC FOOT:

90 cents.

DATE OF COMPLETION:

March, 1923.

building gives added strength and dignity to the design. At the left of the entrance vestibule, space is provided for the desks of the officers of the bank, beyond which are located the tellers' cages with working space, stairways, and vaults at the rear. An elevator is included for use in reaching the second floor, which is also devoted to the business of the bank. At the right of the entrance vestibule is located an executive board room, additional tellers'

cages and coupon booths. The plan of the building, was determined largely by the type of business carried on by the bank. In design and detail this structure has been carefully planned and shows refinement to an unusual degree. The exterior possesses all the architectural grace and distinction usually found in a much larger and more important building, and the interior fulfills the promise made by the exterior. It represents an unusual solution of a problem.



View of Interior



Detail of Entrance

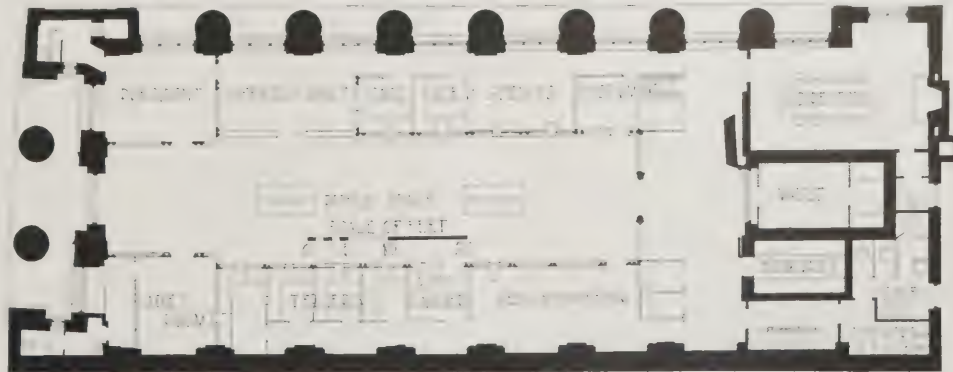


CHARLOTTE NATIONAL BANK, CHARLOTTE, N. C.
ALFRED C. BOSSOM, ARCHITECT

AMONG the many successful and important banks designed by Alfred C. Bossom is this dignified building in the middle South. The design shows a straightforward adaptation of classical Greek architecture, not only in the well proportioned Doric columns but also in the richly decorated entablature with its anthemion encrustation, above which is a high attic with carved swag frieze, forming the crowning feature of the facades. The granite and terra cotta of the exterior are pleasantly relieved by bronze lettering and bronze discs carefully and successfully placed. The corner piers are pleasingly

broken into pilaster strips capped by mouldings of Greek character and refinement. The wide surfaces of the piers at either end of the long facade are also broken by carved swag panels placed near the tops.

The design of the interior of the bank shows more influence of Roman than of Greek architecture. The high coffered ceiling is broken in the center by a large glass dome, which was probably needed in order to supply sufficient daylight. It is possible that the ceiling would have been more pleasing architecturally and more in accord with precedent had it been possible to omit this dome and carry the cof-



Main Floor

FORUM SPECIFICATION AND DATA SHEET 84

Charlotte National Bank, Charlotte, N. C.; Alfred C. Bossom, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Fireproof.

ROOF:

Tar and felt.

WINDOWS:

Double-hung; wood.

FLOORS:

Steel and concrete; Tennessee marble in public space.

HEATING:

Steam.

PLUMBING:

Wrought iron pipe; vitreous China fixtures.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR WALL FINISH:

Plaster.

INTERIOR MILL WORK:

American walnut and birch.

DECORATIVE TREATMENT:

Plaster painted to resemble stone.

COST PER CUBIC FOOT:

\$1.02.

fers, uninterrupted, over the entire length and breadth of the ceiling. The interior of the bank is exceedingly lofty, successfully suggesting the interior of a Roman bath or temple. Corinthian pilasters separate the tall windows on one side and the Classic wall panels on the other. All of the bank screens and the furniture in the public space are of marble. The architectural decorations of the walls as well as the wall surfaces themselves are of plaster painted to resemble stone, the effect of which is satisfying.

The plan of the banking room shows the center given up to the use of the public, with the vaults of the bank and directors' room at the rear of the floor.

Along the outer and inner walls of the room are located the various departments of the bank. At the right of the entrance door is a women's room with a retiring room connecting. Opposite the women's room, on the left of the entrance door, is the president's room with connecting lavatory and coat closet. The use of an uneven number of engaged columns in the long arcade of the principal facade of the bank divides the space into eight large windows. In the case of this arcade the length of it is such that the fact that a column instead of an opening comes at the middle of the facade is not as noticeable or as objectionable as would be the case were it shorter.



The Public Space



Detail, Vault Screen



TRUST COMPANY OF LARCHMONT, LARCHMONT, N. Y.

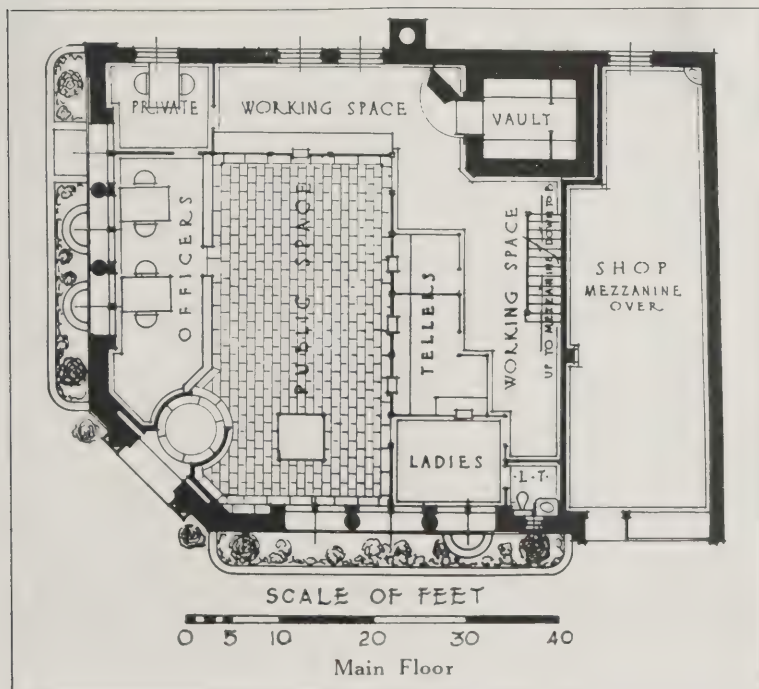
E. D. PARMELEE, ARCHITECT

LOOKING at the illustration of the recently completed building of the Trust Company of Larchmont, one would certainly imagine that the hot sun of southern California or Palm Beach cast the shadows of the Spanish ornamentation against the

warmly toned stucco walls of this adaptation of Spanish architecture. The design of this little building, which shows careful study, is unusually successful in its legitimate use of Spanish detail in the pleasingly proportioned and well balanced facades.

The rich architectural ornament of the doorway, executed in moulded terra cotta, gives proper importance and character to this entrance. Whether the Spanish style of architecture is appropriate for use in a cold northern climate is open to discussion. It at least makes a pleasant change from the type of architecture commonly selected for the many small bank buildings found in all of our northern cities. There is, however, much to be said in favor of this variation in style for use in bank architecture, as may be appreciated from the paragraphs with which the architect kindly supplied the Editor:

"Mr. Alfred Hopkins, writing in THE ARCHITECTURAL FORUM recently, said, 'A new building is the bank's best bid for business.' This is partly because a new building is indicative of stability, and partly because a new building attracts attention. This attention usually fades as fast as the flowers



FORUM SPECIFICATION AND DATA SHEET—85

Trust Company of Larchmont, Larchmont, N. Y.; E. D. Parmelee, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Semi-fireproof; tile and concrete floors; wood roof on steel girders.

EXTERIOR MATERIALS:

Brick and concrete blocks, stuccoed; terra cotta entrance, coping and panels; cast stone base and columns.

ROOF:

Composition.

WINDOWS:

Wood, with plate glass.

HEATING:

Vapor steam.

PLUMBING:

Porcelain fixtures.

FLOORS:

Travertine for public spaces; elsewhere linoleum.

ELECTRICAL EQUIPMENT:

Burglar alarm; wrought iron lighting fixtures.

INTERIOR WALL FINISH:

Antique plaster.

INTERIOR MILL WORK:

Walnut.

DECORATIVE TREATMENT:

Antique plaster walls; wrought iron screen; velvet curtains.

APPROXIMATE CUBIC FOOTAGE:

75,000.

COST PER CUBIC FOOT:

70 cents, including vault and equipment.

YEAR OF COMPLETION:

1925.

after opening day, and the building is then just another 'bank.' Sustained interest is worth dollars in advertising, and it probably was this thought that led the directors of the Trust Company of Larchmont to depart from traditional 'bank architecture' and adopt a style more interesting, though not less dignified. In doing so they followed the trend of the times. Even the largest and most conservative banks are forsaking the Classical and seeking variety in other styles of architecture. The building is Spanish Renaissance, a style of growing popularity in this country because of its ready adaptability to our requirements. Here broad, plain wall surfaces make for dignity and provide a fitting back-

ground for the ornate terra cotta entrance of true Spanish type. The street facades are severe in their simplicity,—too severe, were it not that the corner entrance enlivens the composition and provides a focal point of interest, taking advantage of contrast.

"The interior is no less interesting than the exterior. Here the public space is floored with travertine and enclosed by an exquisitely wrought iron screen silhouetted against plain, rough textured plaster walls. The screen rests on a travertine base. Behind and below the counter, forming a background for the grille, hangs a blue velvet curtain, back of which is steel. The benches and chairs were brought from Spain and are antiques, already generations old."



View of Interior



Detail of Entrance

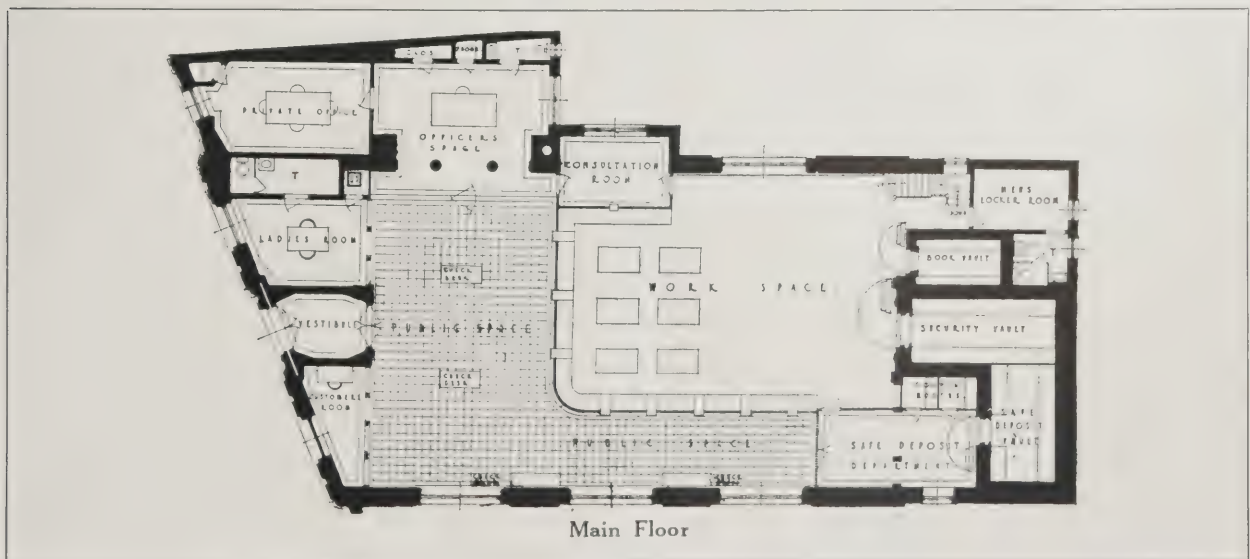


MIDDLETOWN SAVINGS BANK, MIDDLETOWN, N. Y.
HOLMES & WINSLOW, ARCHITECTS

THE design of this dignified bank building shows an excellent monumental arrangement of a well proportioned main building with a low projecting wing on one side and a balancing gateway on the other. Although the character of the Renaissance details used for the expression and decoration of this facade is more English than French, the effect of the completed whole has quite a French feeling about it, suggesting the ultra-refined period of Louis XVI.

The carved panels above each of the side windows, the carved pediment over the entrance door, and the small carved panels in the parapet above the cornice suggest the exquisite detail found in the work of the metal craftsmen of the best period of the French Renaissance. The building is symmetrical and balanced.

The old fashioned idea of a banking house is excellently suggested in the main facade of the Middle-town Savings Bank. The windows are large, well



FORUM SPECIFICATION AND DATA SHEET—86

Middletown Savings Bank, Middletown, N. Y.; Holmes & Winslow, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Fireproof; metal tile and reinforced concrete; steel beams.

EXTERIOR MATERIALS:

Stone front; brick sides and rear.

ROOF:

Tar and gravel.

WINDOWS:

Steel casements.

FLOORS:

Marble and linoleum-covered cement.

HEATING:

Vapor.

PLUMBING:

Enameled iron fixtures.

ELECTRICAL EQUIPMENT:

Lighting and vault and raid protection.

INTERIOR MILL WORK:

Mahogany and white wood.

INTERIOR WALL FINISH:

Caen stone finish.

DECORATIVE TREATMENT:

Plain plaster, painted.

COUNTER SCREEN:

Marble and bronze; metal counters and pedestals.

APPROXIMATE CUBIC FOOTAGE:

222,000.

COST PER CUBIC FOOT:

79 cents.

DATE OF COMPLETION:

October, 1924.

proportioned and well placed. The absence of iron grilles and bars gives an appearance of homelike hospitality rather than of the austere repulsion found in the usual bank having heavily barred doors and windows. This banking house looks inviting and attractive and tempts one to pass within its portals.

The entrance door, which has been set into the lower part of the center arched opening, is simple in design but of excellent proportions. Coupled Corinthian pilasters break the building's facade up into three parts which suggest the arrangement of the women's and general customers' rooms within. Not only because the bank design is exceptionally well proportioned but also because it has unusual architectural dignity and character, the institution is mak-

ing strides in the ever-increasing number of its depositors. The design of the main building itself is sufficiently balanced and well composed to require no projecting wings or bays, but the introduction of these unusual features adds to rather than detracts from the solidity and importance of the structure.

The spacious banking room within reflects the same careful study and painstaking effort to create an interior both practical and monumental. As is possible in savings banks, the amount of working space is but little larger than the public area, which occupies the best part of the building. A security and book vault occupies the center rear of the building, balanced by the men's locker room on one side and the safe deposit department on the other side.



Interior, Showing Arrangement of Banking Screen

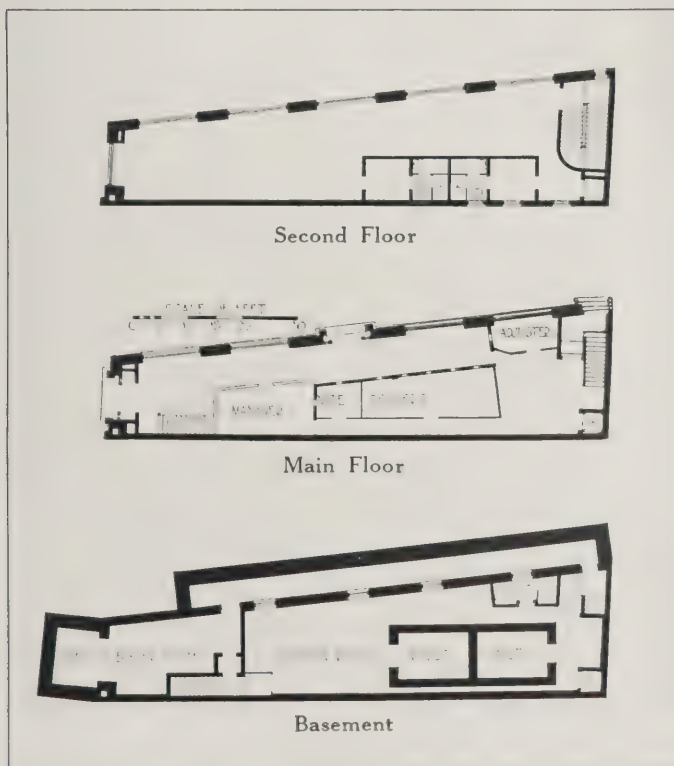


SHERIDAN SQUARE BRANCH, CORN EXCHANGE BANK, NEW YORK
S. EDSON GAGE, ARCHITECT

AN excellent example of a practical, inexpensive, small city bank is this branch of the Corn Exchange Bank in New York. Located on an irregular-shaped corner lot, only 15 feet wide at its nar-

rowest end, this long and narrow building is simply and directly planned. There are two entrance doors, one at the narrow end of the building on Grove Street, and the other in the center of the facade on

Sheridan Square. The facade has five high arched openings, broken by a wide string course at the level of the second floor. These large windows adequately light the interior of both the first and second floors of the bank and give a pleasing architectural effect to the exterior. These arches, which form the principal part of the exterior design, rest on a high base course which brings the sills of the windows about 5 feet above the sidewalk level. The marble of this base course is repeated in the string courses, the neckings of the piers between the windows, the ornamental key blocks in the arches, the simple Greek entablature which crowns the arched motif of the facade, and in the lintels of the third story windows. The slightly projecting cornice which supports the overhang of the slate roof above is made of wood and painted white. The Colonial character of the building is still further marked by the use of red brick, laid in a combination of Flemish and English bonds with white mortar joints, producing an interesting design. The brickwork of the arches themselves is also unusual in character and worthy of note. Here the bricks, instead of being set on lines radiat-



FORUM SPECIFICATION AND DATA SHEET—87

Sheridan Square Branch, Corn Exchange Bank, New York; S. Edson Gage, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Fireproof.

EXTERIOR MATERIALS:

Brick and marble.

ROOF:

Slate.

WINDOWS:

Steel.

FLOORS:

Terrazzo.

HEATING:

Steam.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR WALL FINISH:

Paint.

INTERIOR MILL WORK:

None.

TIME OF COMPLETION:

1919-1920.

ing from the center of the arch, follow round the arch in three rows, thus emphasizing the curve of the opening. The third story of the building appears as an attic above the main entablature. The well proportioned, rectangular windows break the walls of this attic above each of the main arches. The marble lintels of these windows show the influence in their design of the late Colonial detail found in many of the old houses in Charlton Street and Sheridan Square in Greenwich Village, where the bank stands.

The interior of the bank is as simple and direct in its architectural design as is the exterior. The building is so narrow that the large front windows light the working space quite as successfully as they do the public space which extends along the outer

side of the room. Terrazzo is used for the floor of the public area. Above a marble base, simply paneled railings of wood and a screen of glass and wood shut off the working area from the public space in the banking room. The walls are simply painted in imitation of Caen stone, with the line of each ceiling beam carried down on the wall, dividing the imitation stonework into vertical panels. Stairs from the main floor lead to the safe deposit vaults in the basement and up to the second floor, which is used for the bookkeeping department of the bank. On the third floor are located rest rooms and a dining room for the use of the officers and employes of the bank. The special type of steel window frames used permits the opening of individual panes of glass.



Detail of Entrance



View of Interior

INTERIOR ARCHITECTURE

Salon in the Apartments of Madame Du Barry, Versailles

By C. HAMILTON PRESTON

TUCKED away under the mansard roof in the wing on the right as one approaches the Palace of Versailles from the town side, is a series of smaller and more intimate rooms known as the Du Barry Apartments, which were created by Louis XV for the royal favorite, Du Barry. They include some of the most charming rooms in the Palace from the point of view of both design and detail. They are excellent examples of their type.

The problem for the architect was to get sufficient height in the rooms, as the dormer windows opening on the court were low. However, the ceilings were raised to the required height and, though the windows are considerably lower, the lighting is fairly adequate. Although this gives a very unusual appearance to the rooms, it has been ingeniously handled. This location of dormers occurs only in certain of the rooms and not in that which is the subject of these measured drawings. The decorations of the suite, which is very complete, consisting of several salons, library, boudoirs, etc., are most sumptuous. In general the paneling follows the restrained classical style of Louis XIV and the Regence, though much of the ornament is of the more elaborate Louis XV type. Several of the rooms were

done in cream and white and several in colors, deep blue prevailing; but these latter, under the Second Empire, were all changed to the shade of gray popular at that time, as were many other interiors.

The subject of these drawings, which served as a Salon, is among the most interesting of the rooms. It is distinctly Regence in feeling and restrained in treatment, although rich in beautiful and well placed ornament. Notable are the windows with curved jambs and soffits, most difficult to execute, and yet in perfect condition to this day. The ornaments over the center of the arch and the rosettes in the soffit are exquisitely carved. The two elliptical doorways have the same type of ornament. All the panels have the easement at the corners with charming carved leaf motifs, while the narrow horizontal panels above the dado all have exquisite rosettes and tiny leaf ornaments at the corners of the raised part of the splay. The mantel, of rose and gray marble, is restrained in design and admirably suited to the room. One feels here the light and gaysome quality of the Louis XV manner sobered and subdued by the more severe and restrained Regence period which preceded it. Though little known, this room is one of the most perfect examples of the work of its period.

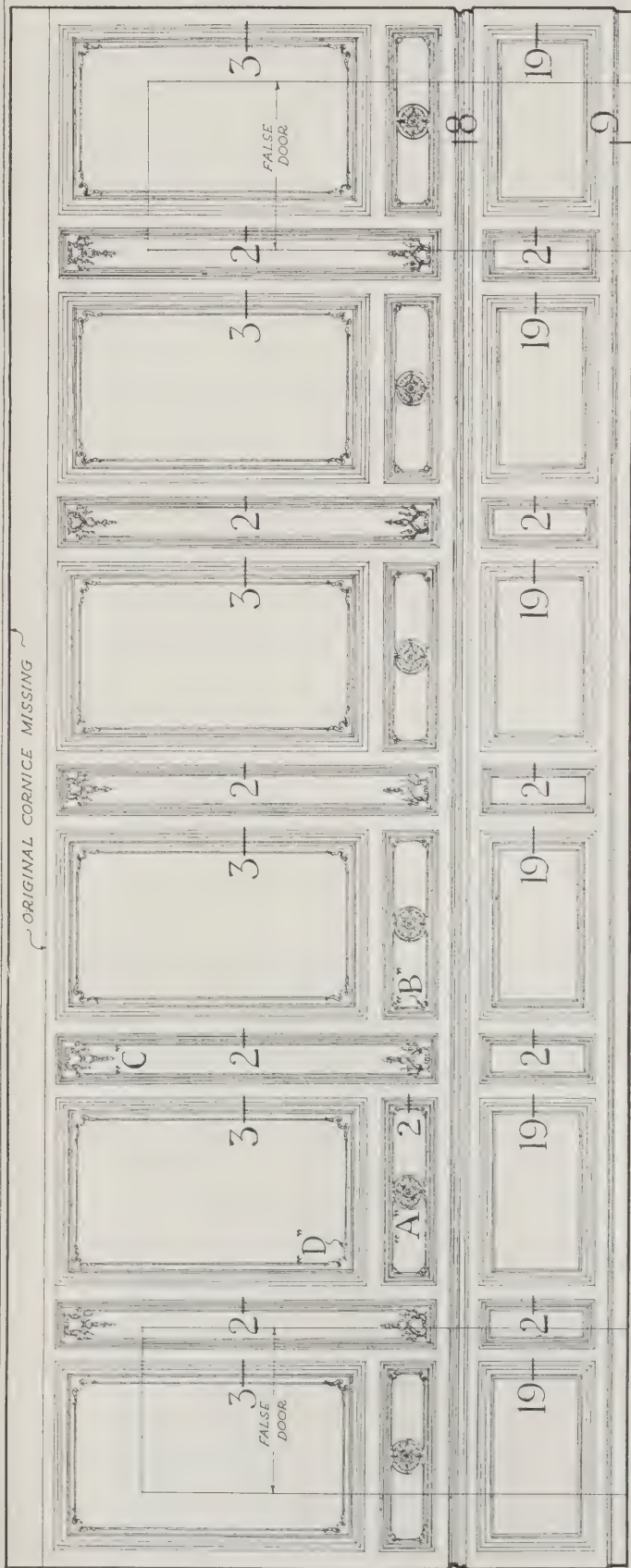


Doorway, Salon, Du Barry Apartments, Versailles

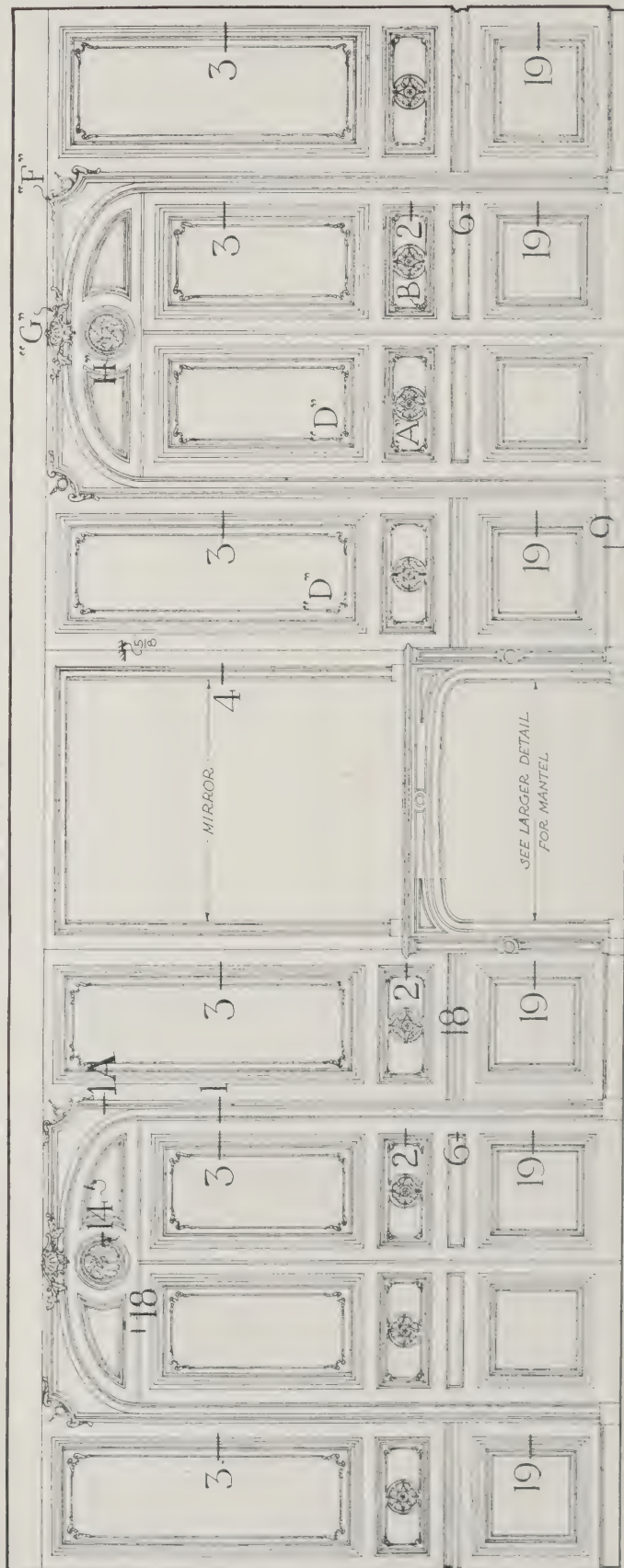


Mantel, Salon, Du Barry Apartments, Versailles

ORIGINAL CORNICE MISSING



ELEVATION A~A



ELEVATION B~B

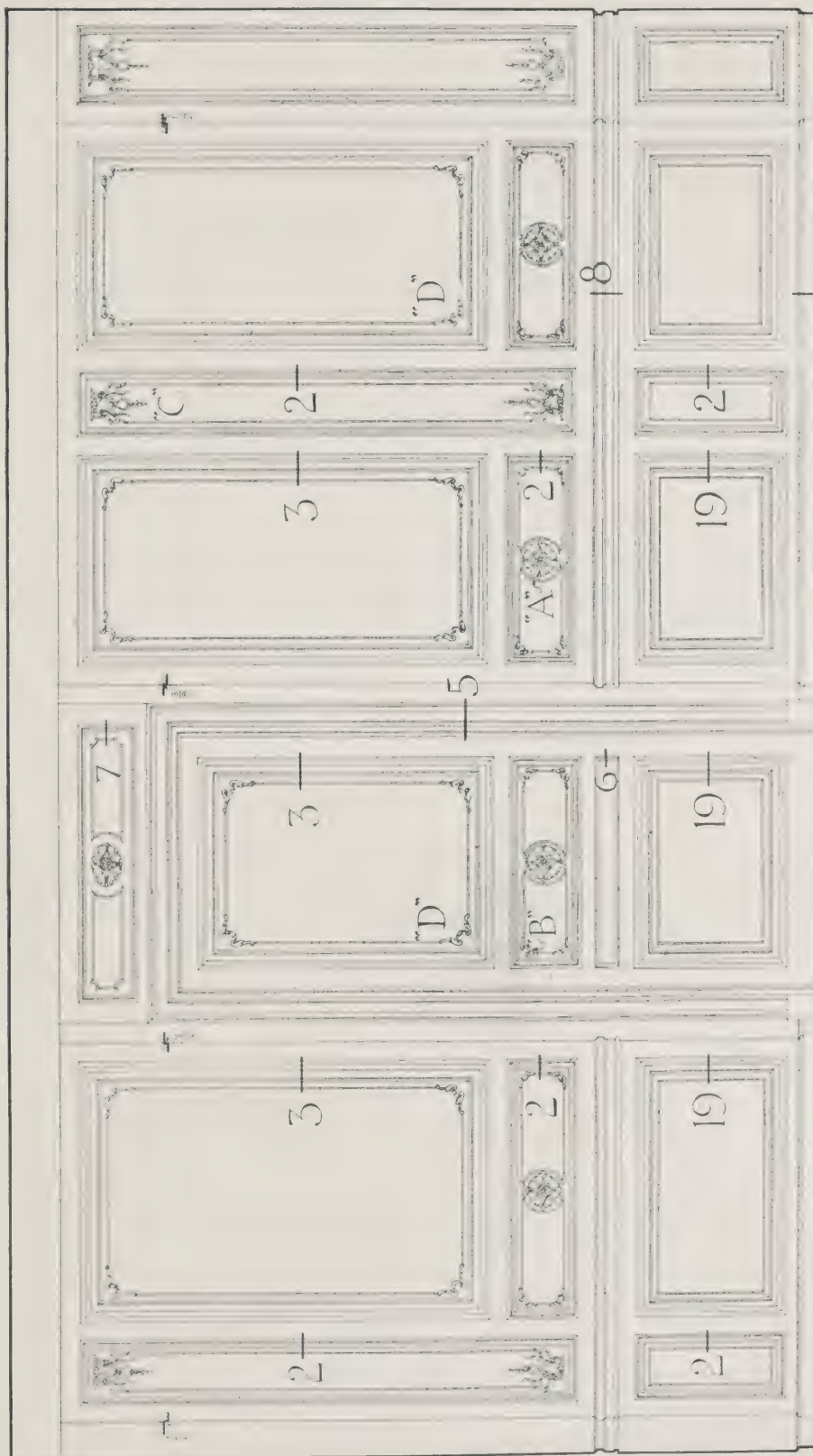
DU BARRY APARTMENTS, VERSAILLES

Scale $\frac{3}{8}$ " = 1 Foot

SEE LARGER DETAIL
FOR MANTEL

MIRROR

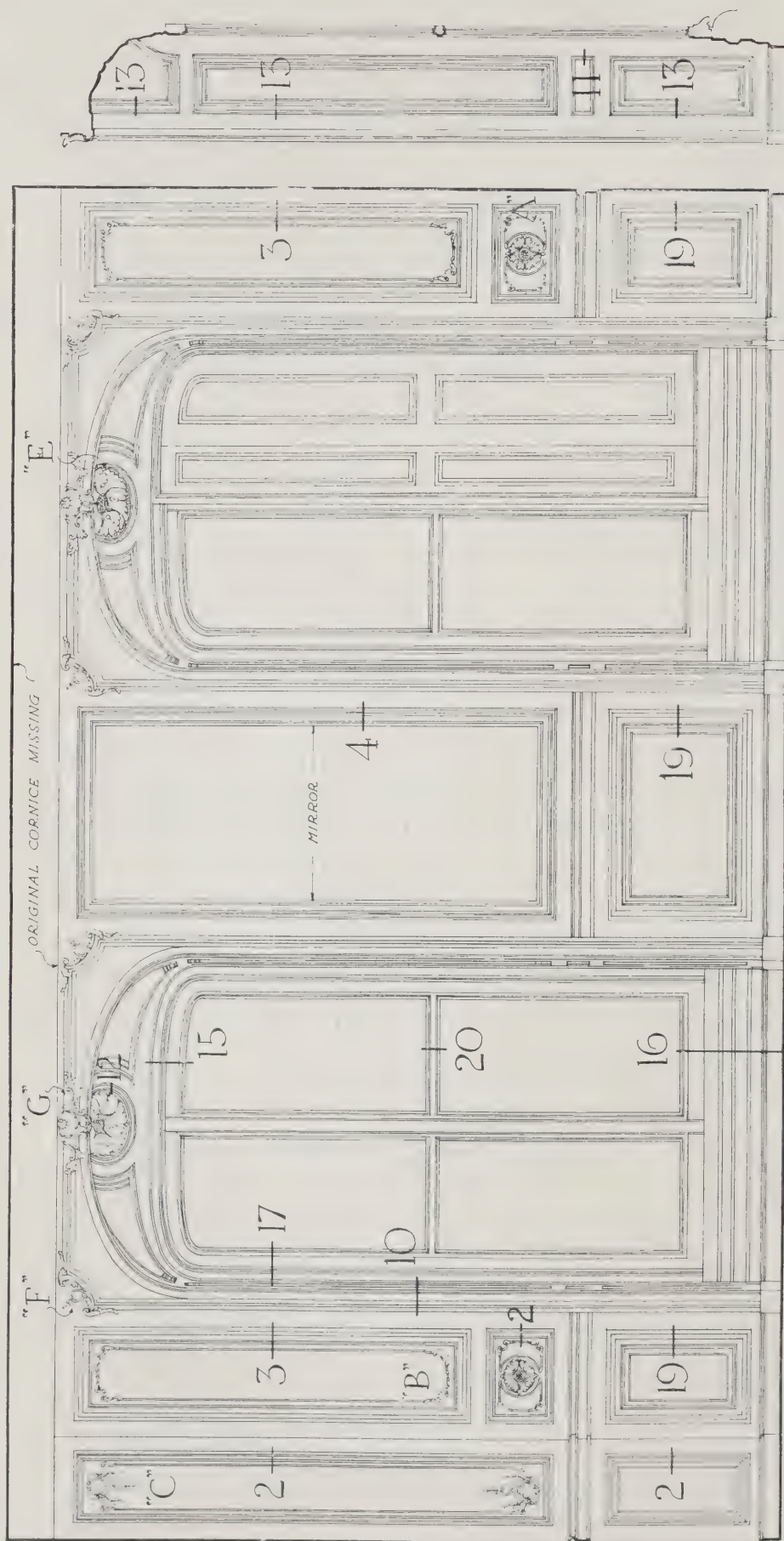
"G" "F"



ELEVATION C~C

Scale $\frac{1}{2}$ " = 1 Foot

SALON
DU BARRY APARTMENTS
VERSAILLES

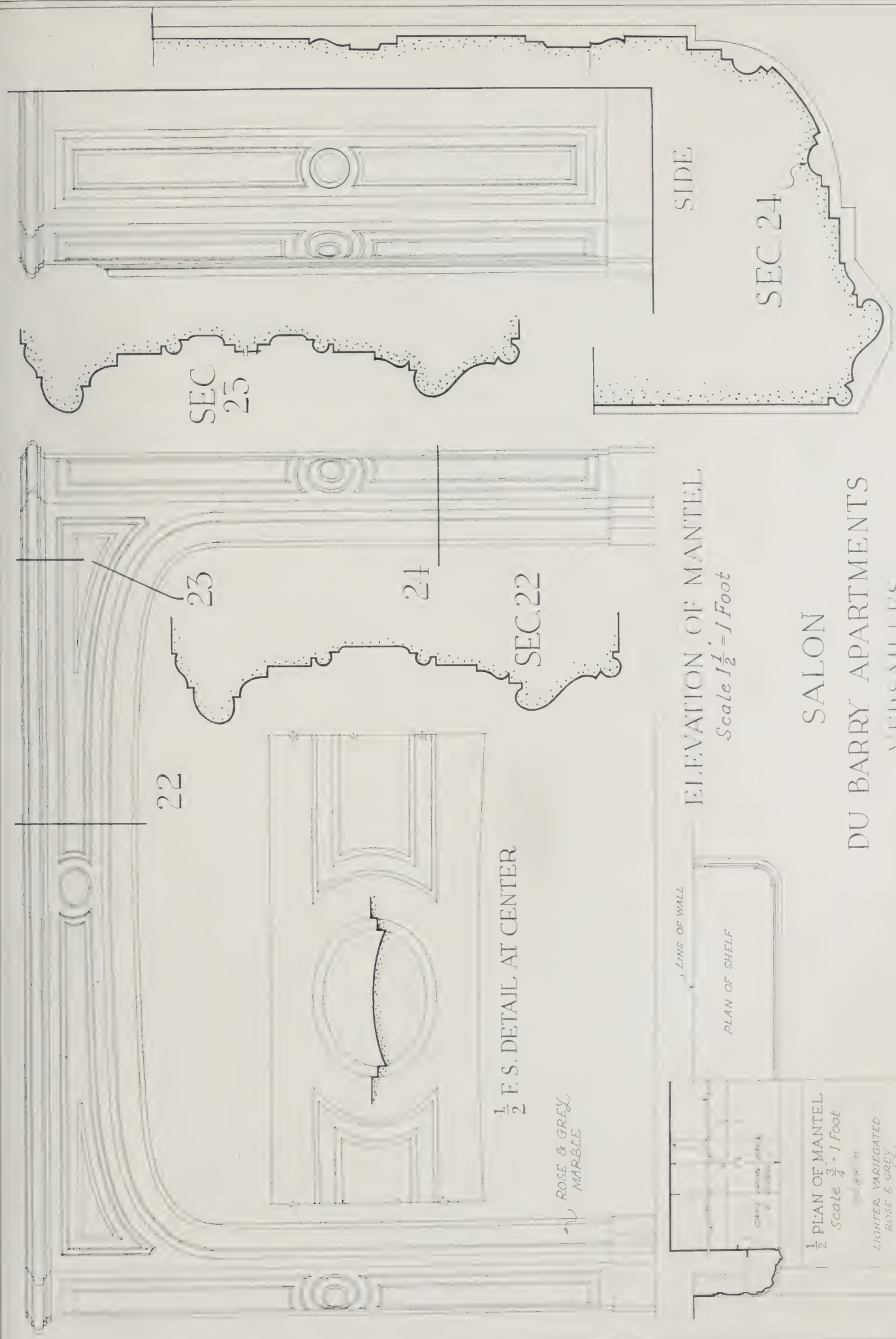


ELEVATION D~D

Scale $\frac{1}{2}$ " = 1 Foot

SALON
DU BARRY APARTMENTS
VERSAILLES

SECTION
THRU
WINDOW



ELEVATION OF MANTEL
Scale $1\frac{1}{2}'' = 1\text{ Foot}$

SALON
DU BARRY APARTMENTS
VERSAILLES

$\frac{1}{2}$ F.S. DETAIL AT CENTER

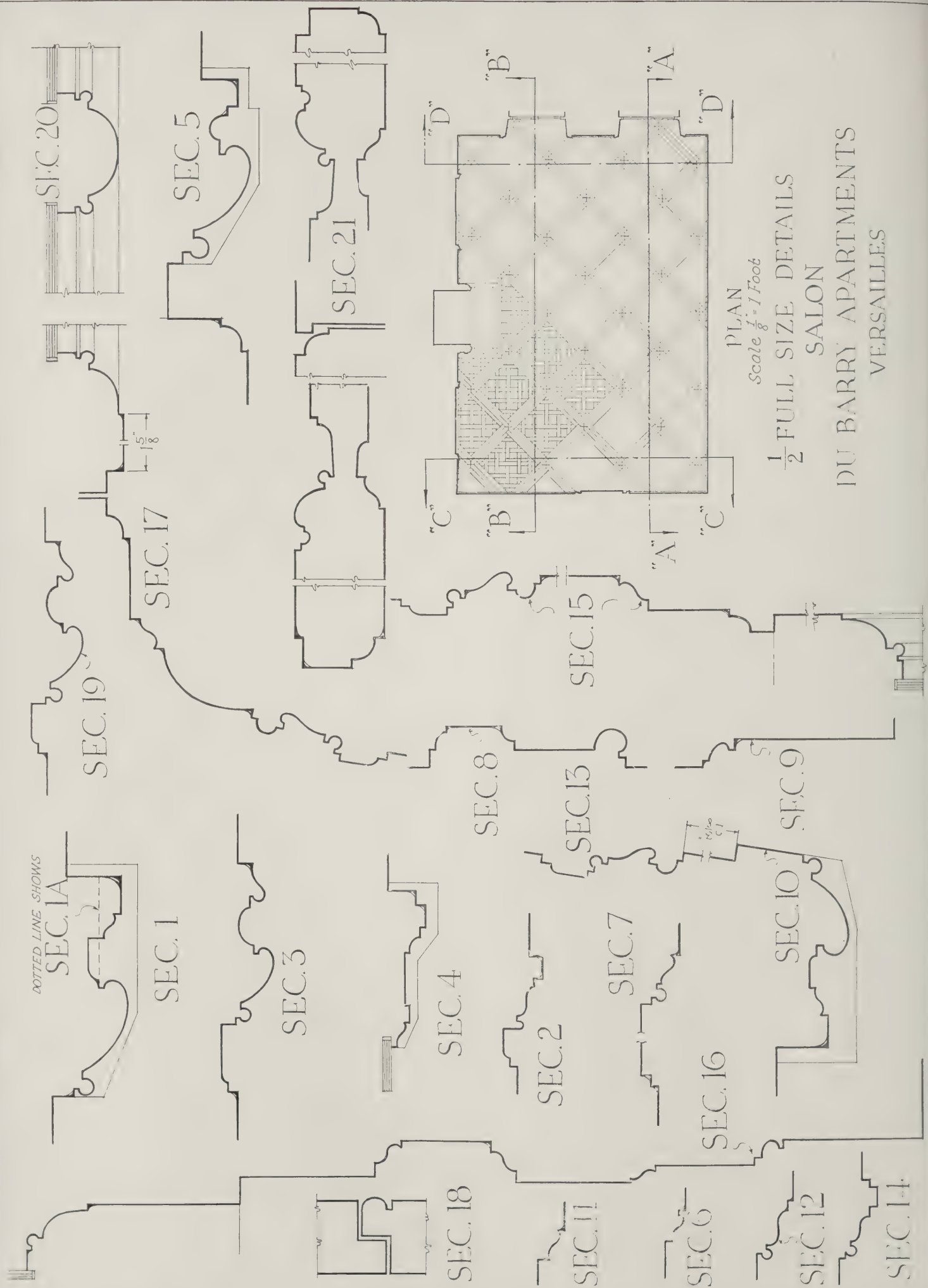
ROSE & GREY
MARBLE

LINE OF WALL
PLAN OF SHELF

$\frac{1}{2}$ PLAN OF MANTEL
Scale $\frac{3}{4}'' = 1\text{ Foot}$

LIGHTER, VARIEGATED
ROSE & GREY,

BLOOD STONE





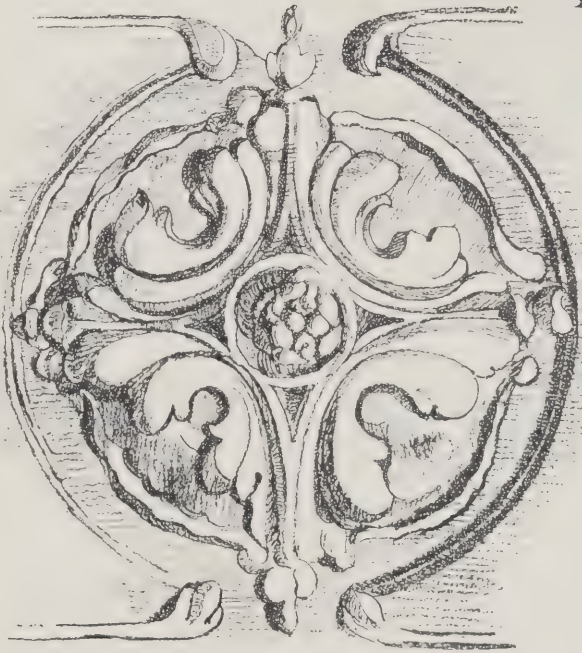
DETAIL. "T"
 SALON
 DU BARRY APARTMENTS
 VERSAILLES



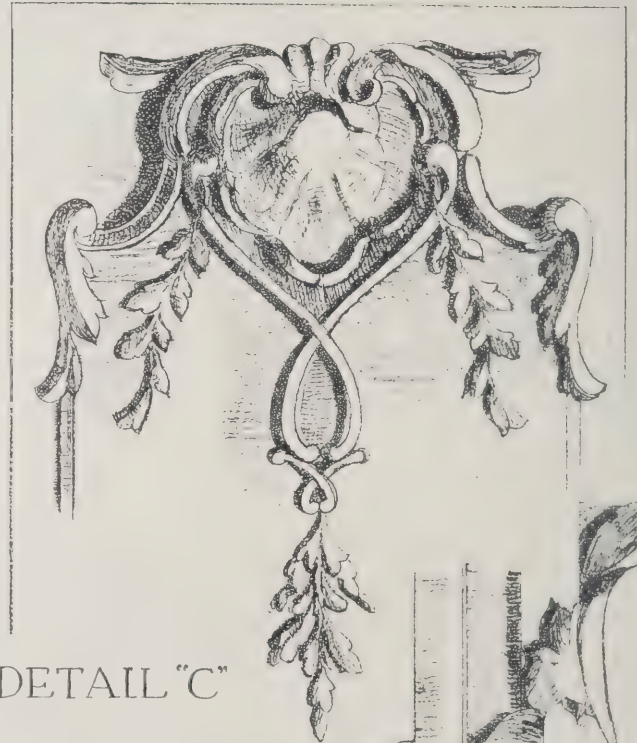
DETAIL. "H"
 SALON
 DU BARRY APARTMENTS
 VERSAILLES



DETAIL "G"



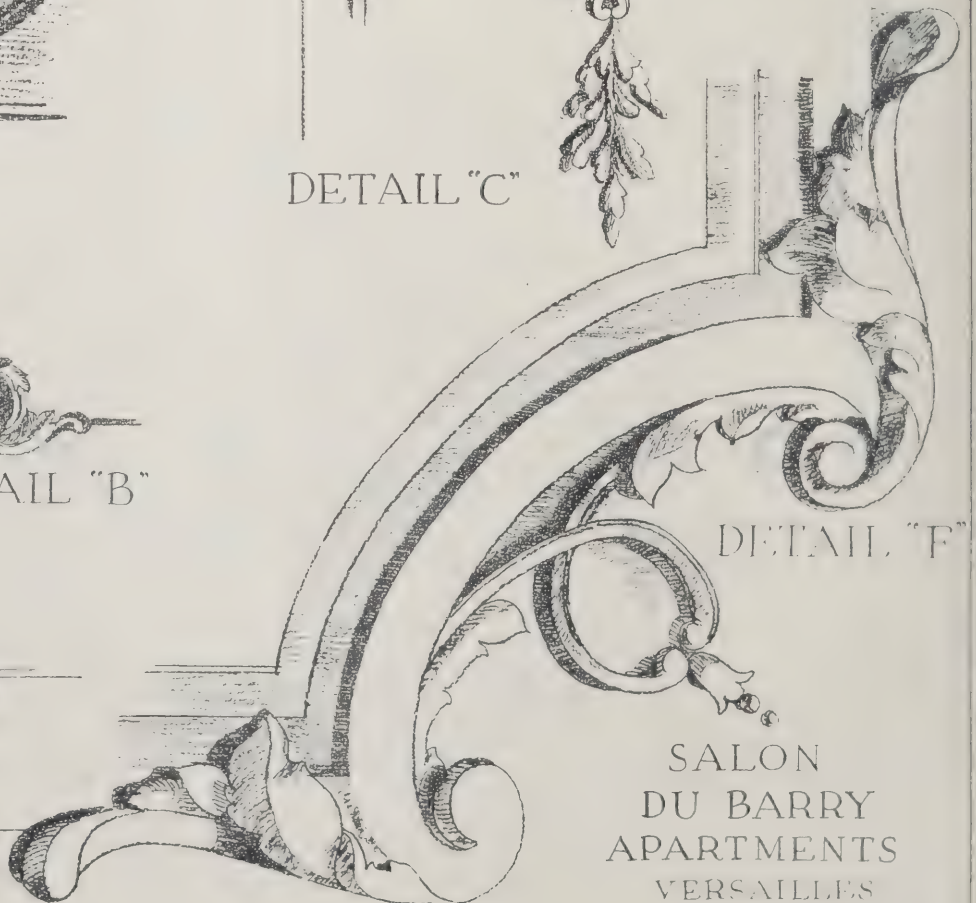
DETAIL "A"



DETAIL "C"



DETAIL "B"



DETAIL "F"

DETAIL "D"

SALON
DU BARRY
APARTMENTS
VERSAILLES



Reproduced by Courtesy of H. C. Dickens

RUE MIREBEAU, BOURGES

From an Etching by Louis C. Rosenberg

The Architectural Forum

The ARCHITECTURAL FORUM

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Number 2

The Bridge as Architecture

By REXFORD NEWCOMB

Professor of Architecture, University of Illinois

THE SONG OF THE ROMAN ARCH

It comes with the arc of the blue day's light,
It comes with the spring of the rainbow bright,
And with the wedding ring's circle of power,
And it bridges the streams and it strides o'er the plain;
In its arms is the river it sets down again
For the fevered metropolis' dower.
—Durward's, "Building of the Church."

AMONG the most interesting and inspiring structural works of man stands the bridge, the antiquity of which is as great as that of architecture itself; indeed the impulse to get across topographical impediments of one sort or another has led even the lower animals to improvise means of spanning distances. How far back in the history of the human race came the first expedient of this character, it would be difficult to say. We know, however, that by the days of the Romans the bridge had taken on a fine religious symbolism and was considered as worthy of embellishment as were their great works of architecture. As a matter of fact, until comparatively recent times it has been difficult to find that man considered those structures that we now call "works of engineering" as separate or distinct from other structural works—architecture.

In the days of the Renaissance at Florence we hear of the celebrated sculptor and architect of the dome of St. Peter's, Michaelangelo, distinguishing himself as a military engineer during a siege of eleven months. Surely here was architect and engineer in one person! What has been said of Michaelangelo might be said of numberless others, among them Antonio Contino, Leonardo da Vinci, Michele Sanmichele, Andrea Palladio, Bartolomeo Ammanati, Fillipo Brunelleschi, Inigo Jones, and Sir Christopher Wren, at once celebrated as architects and engineers. In reality the mother art of architecture originally embraced all the structural arts, and for untold periods the architect acted as designer and builder of any material work, be it a temple, a fortification, an aqueduct or a bridge. As time went on, the architect who acted in military matters,—designed and built fortifications and engines of war,—became a "military engineer," and as war was often prevalent he was rarely without employment. Later on the peace-time works of pure utility were exe-

cuted by an individual known as a "civil engineer." It is to be noted, however, that before the advent of heavy construction in iron and steel, the bridge, since it was bound up with symbolism, was considered the work of the architect. To this the great bridges of the Renaissance period will universally testify.

The commemorative symbolism and triumphant significance of the bridge has always demanded, and still demands, something more than structural considerations. Here, as surely as in pure architecture, the demand for stability, utility and beauty is insistent. That steel enters largely into the construction of modern bridges is no reason why beauty should be crowded out, any more than it should be crowded out of the modern steel-framed skyscraper. Neither does the fact that a bridge is to be constructed of steel preclude the possibility of its possessing beautiful proportion. Beauty is not a matter of materials; it is a matter of line, mass, and proportion. If America has as yet done little to advance the argument of architectural beauty in bridges, certainly Europe with her wonderful heritage of interesting and beautiful old examples may offer us something in the way of suggestion in this connection. The bridge builder of today can find here inspiration for his work in the same way that the designer of steel-framed buildings finds inspiration for his essays.

In almost every country of western Europe one is impressed with the permanence of the roads that extend, web-like, in every direction, and with the strength and beauty of the bridges that span the innumerable streams that these roads encounter. There is, after all, a beautiful symbolism connected with the bridge that, rainbow-like, gracefully and triumphantly spans the distance between a here and a there, and bears one safely over the broad, swiftly moving stream or across the deep, rocky chasm as the case may be. And when one is carried by a rapidly moving express train from the black depths of some mountain tunnel out upon the slender-arched span of an Alpine bridge that bears him safely over the rushing mountain flood below, he cannot help feeling that man has triumphed, and triumphed gloriously, over his environment. It was with awe and admiration that the writer has considered some of



Fig. 1. Bridge of Stirling



Fig. 2. "Auld Brig o' Allan," near Stirling

the great and historic bridges of the Old World, and he resolved, on a recent trip, to keep notes and impressions of some of the beautiful and interesting bridges that he should see or pass over in his travels.

In descending the St. Lawrence River, bound for Liverpool, your steamer passes under the great Quebec Bridge, the longest of the world's cantilever bridges, with a span of 1800 feet at a distance of 150 feet above the water, which guarantees clearance to any vessel that may pass that way. The Quebec Bridge, even if not beautiful, is interesting not only because of its great span, exceeding as it does by 100 feet the span of the great Firth of Forth Bridge, but also because of the fact that it is the first important structure in which what has come to be known as the "K" system of web-bracing was employed. This tremendous structure was first conceived in 1899, but was delayed by the great disaster of 1907, when the south anchor and cantilever arms failed, killing some 80 workmen, and it was completed only about 13 years ago. It carries the double tracks belonging to the Canadian Government Railways.

It seemed rather appropriate that the writer should, after viewing one of America's great steel bridges, visit in the course of the next two weeks the second of the world's great steel spans, the Forth Bridge. As one speeds toward Edinburgh upon that most excellent Scottish railway, the Caledonian, the massive steel humps of the bridge loom up far across the country. A fine view of the structure and an idea of what it means to Edinburgh and Leith are perhaps best obtained by a view from Calton Hill, from the crown of which one commands a fine panorama of the cities, the Firth of Forth and the land beyond. The Forth Bridge, although of metal, has a fine majesty and power, even something of beauty, not found in the Quebec Bridge.

A trip to the ancient town of Stirling served to acquaint the writer with two of the oldest and most picturesque bridges in all Scotland; one, the "Auld Brig o' Allan" in the little village of the same name, some three miles from Stirling, and the other, the old Bridge of Stirling itself. The Bridge of Stirling (Fig. 1) is perhaps the most interesting in



Fig. 3. Prebend's Bridge, Over the Wear River at Durham



Fig. 4. Pont Neuf, Paris, Completed 1606



Fig. 5. High Bridge, Oxford

Scotland, due to its age, historical associations and beauty. From documentary evidence it has been established that the present "Old Bridge" dates from about 1409, although it was antedated by an older Roman structure, which crossed the River Forth at this point. Old Scottish bridges are rich in history.

The "Auld Brig o' Allan" (Fig. 2), beneath the great arch of which the writer had the pleasure of having a quiet lunch after a delightful three-mile ramble in the countryside, is quite as interesting as the Stirling Bridge and bears unmistakable evidences of having been widened, due to the growing demands of traffic. The piers are founded directly upon solid rock, and the ancient structure seems to bear the weight of the heavy modern motor trucks quite as competently as it bore that of the one-horse carts of a bygone day. Old Scottish bridges, although interesting in an artistic and historical way, are scarcely ever large or of distinguished design; but in a land as broken as is Scotland, the bridge is always an important landmark, and the Scot not only prizes his bridges but is proud of them

and wants the visitor to see and appreciate them.

Larger and often more beautiful are the delightful English bridges that span the pleasant streams that water old Britain. In selecting one for illustration, the writer could think of none more satisfying than the lovely old Prebend's Bridge (Fig. 3) over the River Wear at Durham. The Wear makes almost an island of the great promontory upon which stand the Castle (now the University) and the Cathedral of Durham. The promontory is connected with the remainder of the city by three bridges: The Framwell Gate Bridge, the Elvet Bridge and Prebend's Bridge. All three are old bridges, the Framwell Gate dating from the fourteenth century, but most beautiful is Prebend's. It is a distinguished bridge, beautifully proportioned and graceful in all its parts. Its cutwaters carry lookouts that provide places, safely outside the traffic's way, for the contemplation of the scenery in either direction and, situated as it is amid well wooded and beautifully parked banks and spanning the river above the dam, its graceful arches and



Fig. 6. Pont du Gard, near Nîmes



Fig. 7. Tower Bridge, London

stately piers are usually charmingly reflected in the glassy waters. Beautiful is Durham from this bridge.

One of the most curious bridges in history is to be found at Crowland not far from Peterborough. The site had an ancient wooden bridge built before 943, at which date it is referred to in a charter. The present bridge was undoubtedly built by the abbots, as it betrays in every line its affinity with Gothic church architecture. It is a triangular bridge, built at a point where the Welland River divides into the channels known as the Catwater and the Nyne. The bridge consists of three pointed arches that have their abutments at the angles of an equilateral triangle and meet at the center, thus forming three roadways and three waterways. The profiles of the Gothic mouldings of the arches give a certain index as to the date of the bridge, which cannot have been earlier than the opening of the fourteenth century. It is a relic of a romantic period.

London has had, and has today, many interesting bridges. "Old London" Bridge, which has figured in all sorts of poetic lore, from the nursery rhyme



Fig. 8. Pont Marie, Paris

up, is perhaps more generally known to people than any other bridge in history, and the lore regarding it, if gathered together, would fill volumes. It was a most interesting old structure, built partly as a bridge, or rather a street of houses and shops over the river, and partly as a dam to raise the water level of the Thames upon its eastern side, thereby aiding shipping. There is supposed to have been a bridge over the Thames at London as early as 978, but authentic records are not available for the period before 1014. A fire in 1136 partly destroyed the first structure, so that in 1176 Peter of Colechurch began "Old London" Bridge and worked as its architect and builder until his death in 1205. The bridge was completed in 1209 by a monk brought from France for the purpose. A chapel dedicated to St. Thomas was constructed upon the bridge, and this chapel served as the resting place of Peter of Colechurch. In the matter of the chapel, "Old London" was like the Bridge of St. Benezet at Avignon, which still stands. "Old London" Bridge was, after many partial destructions by fires that ravaged the



Fig. 9. Pont Alexandre III, Paris



Fig. 10. Pont du Carrousel, Paris

timber houses which it carried, finally demolished and replaced in 1824 by new London Bridge. Until the completion of Westminster Bridge in 1750, the "Old London" was the only bridge across the Thames at London, and was consequently a very important structure,—one of the most important in London.

New London Bridge was designed by George Rennie, and erected by his brother, Sir John Rennie, who completed the work in seven years, a great contrast in the matter of time when compared with the 33 years that it took Peter of Colechurch and his successor to complete "Old Bridge." The new bridge was an excellent structure in its day, but it was conceived, like most London bridges, upon a small scale. But few London bridges accord with one's idea of what the bridges of a great city like London should be. New London Bridge is not only not distinguished in scale but has proved too small for the traffic, and consequently it had to be widened in 1902-4 from 56 to 65 feet, the present width.

Perhaps the most unique and picturesque of modern bridges anywhere is the Tower Bridge (Fig. 7).



Fig. 11. Pont San Michel, Paris

This bridge gets its name not from its towers but from the fact that it is near the Tower of London. It is a suspension bridge with a secondary bascule (jack-knife) bridge in the center span to permit the passage of river traffic. Two great arched towers in the river and two towers on the shore abutments carry the suspension chains, the opening bridge between the two great towers consisting of two bascules, pivoted near the faces of the piers, which, rotating in a vertical plane, permit, when the leaves are open, a clear span of 200 feet and a clearance above high water of 141 feet. Londoners are very dependent upon and very proud of Tower Bridge, but the writer must confess that, although he admired the engineering prowess that made possible such a structure, he was not "thrilled" by the attempted "architecture" of the great bridge.

But if London is dependent upon her bridges and proud of them, Paris is even more so, and it is no exaggeration to say that Paris has more interesting and beautiful bridges than any other European city. A mere catalog of the more famous Parisian bridges

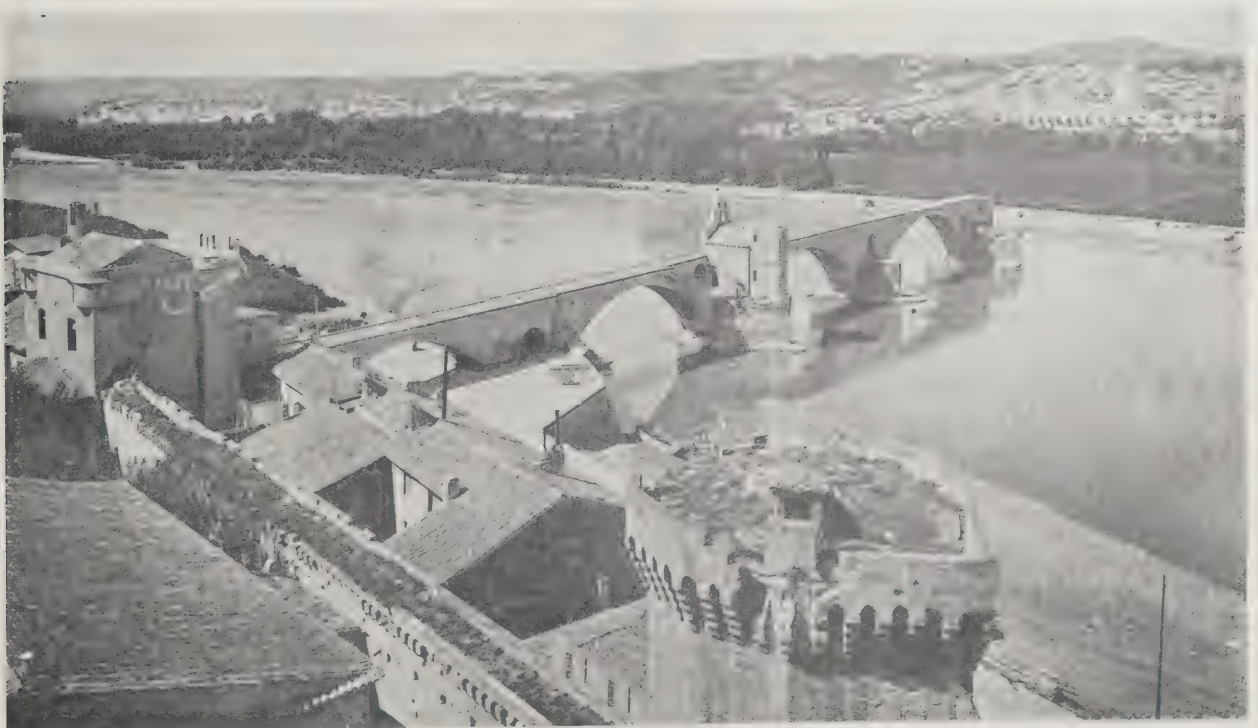


Fig. 12. Pont St. Benezet, Avignon

would make a formidable list, and the merest fragmentary remarks regarding the important bridges of the city would carry the present paper far beyond the limits allotted to it. From the Parisian's point of view the *Pont Neuf* (Fig. 4) is the most interesting and best loved. This famous old Renaissance structure, crossing as it does the western end of the *Ile de la Cité*, which divides it into two sections, was begun in 1578 and completed in 1606. The bridge is decidedly architectural in its conception, the cutwater carrying corbeled or bracketed semi-circular lookouts or retreats which are provided with stone seats. The solid stone balustrade is carried along the bridge and out and around the lookouts by means of brackets, each adorned with a mask, while heavy bronze lamp posts, standing over the piers, flank the roadways. On the island between the two sections of the bridge stands a handsome bronze statue of Henri IV, with balustrades and seats of stone conveniently near, making a most interesting and delightful place to rest. Situated as it is, *Pont Neuf* always figures largely in Parisian celebrations, and on a memorable Bastille Day the writer, standing upon *Pont des Arts*, witnessed one of the finest displays of fireworks that it has ever been his pleasure to see, each and every star and sparkler of which was doubly enhanced by its reflection in the quiet waters of the Seine. *Pont Neuf* is one of the masterpieces of the Renaissance architect, Jacques Androuet du Cerceau, but it has been much altered since the days of the Renaissance. One might expand upon the history and lore that surround such bridges as *Pont Louis Philippe*, *Pont San Michel*, *Pont Marie*, *Pont au Change*, or the more modern *Pont St. Louis* and *Pont du Carrousel*. Each is beautiful, interesting or historic in its own way, and each has had its share in Parisian romance.

One of the finest bridges in Paris, and the widest (131 feet), is *Pont Alexander III* (Fig. 9). This modern structure, constructed of cast steel, was built at the grounds of the Exposition of 1900 to connect the *Champs Elysees* and the *Esplanade des Invalides*. The bridge is remarkable for its single span of 353 feet and its shallow rise of only 20 feet. At either end stand gigantic ornamental pylons, 75 feet high and justly celebrated as among the handsomest bridge pylons in existence. The *Alexander III* is further adorned by beautiful bronze electroliers and statue groups, making it one of the most ornamental and striking bridges in the world.

Outside of Paris there are many fine bridges. Nearly every French city or village situated upon a stream has an ancient masonry bridge, hallowed



Fig. 13. Old London Bridge, From an Old Print

either by a distinguished history or by the many interesting legends that cling about it. The writer was especially interested in the old *Pont St. Benezet* (Fig. 12) across the Rhone at the historic town of Avignon. There are many legends about this venerable bridge, which seems to date from about 1177. It was built by St. Benezet, who is said to have been a member of the *Freres Pont-*

tifes or Bridge-building Brotherhood which arose in the south of France during the latter part of the twelfth century and maintained hospices at the fords of principal streams, besides building bridges and looking after ferries, important functions at the time.

The bridge at Avignon is far from intact at the present time, but in spite of wars, floods and explosions, four of the original 21 graceful, elliptical arches and the chapel on the third pier remain. The bridge was originally 2,000 feet long, had a clear width of 13 feet between parapets, and was bowed slightly upstream in order to better resist the force of the current. The old structure, with its chapel to St. Nicholas, the patron saint of those who travel by the river, makes an interesting and picturesque ruin when viewed from the ramparts of the old fortified Palace of the Popes. The old structure figures in many a legend and in many a quaint dance or song similar to that of which the refrain is:

*Sur le pont d'Avignon,
L'on y danse, l'on y danse,
Sur le pont d'Avignon,
L'on danse tout en rond.*

Not far from Avignon, and on the road from this ancient papal city to Nimes, is one of the world's great ancient bridge structures, the old Roman aqueduct, *Pont du Gard* (Fig. 6). The aqueduct was built during the reign of Augustus to provide a water supply for the Roman city of Nimes, and consists of three stories of arcades (the lower of six arches, the second of 11 arches) and a waterway at the top carried upon 36 small arches. The lower tier was originally 20 feet, 9 inches wide, the second tier 15 feet, and the upper 11 feet, 9 inches. In 1743 comprehensive repairs were made, and the lower tier of arches was widened to make a roadway on one side. The stones are laid without the use of mortar, being clamped together with iron bars, while a lining of cement prevents the waterway from leaking. *Pont du Gard* is built of a yellowish oölitic stone of the locality and, in full sunshine against the deep blue Mediterranean sky, it makes a distinguished appearance and inspires in one a fine admiration for Roman structural genius which built so many great structures yet remaining and in use after many centuries.

Some Belgian Garden Suburbs

By EDITH ELMER WOOD

TO rebuild 80,000 war-destroyed dwellings is no small task for a nation of seven and a half million people, but the Belgians have accomplished it. A special government bureau, the *Office des Regions Devastees* (O.R.D.) under Ralph Verwiltghen, one of Belgium's foremost town planners, was created for the work, and has functioned with efficiency and enthusiasm since the declaration of peace.

Much work, of course, especially where buildings of historic interest were concerned, has been merely a careful reproduction or restoration of what was there before. But the housing of working people, which left much to be desired in the old days, has been greatly improved. It has been the policy of the O.R.D. wherever possible to erect for them a series of small garden suburbs, in which four-, five- and six-room cottages, with all modern improvements (except bathtubs and pipeless heaters), are grouped around children's playgrounds or along grass-bordered roads. The houses are substantially built, usually of brick, with tile roofs. Every house has its garden, and the planting of trees, grass and shrubbery has been well carried out. Mr. Verwiltghen has been successful in giving these little communities a cheerful, homelike aspect, even where the oddly shaped parcels of land procurable must have seemed least suitable for the purpose. Ligy, Logis and Kalfvaart, all these being situated in the outskirts of Ypres, are good examples of these developments, exhibiting their most admirable points.

Restoring 241 devastated communes might seem to be enough to absorb the building energies of contemporary Belgium, but its enterprising people have not been content to halt there. Plans had been made before the war to improve the housing of the working classes with the help of government loans for 66-year periods at 2 per cent interest. The work was to be done by local non-commercial housing societies of a semi-private, semi-public character, under the supervision of a national body wholly public. The carrying out of these plans was resumed in 1920, in spite of the spectacular rise in building costs to six times those of 1914, which made it necessary to add a provision for a substantial subsidy. Under this system nearly 30,000 cottages and apartments have now been built by over 200 local societies. Only the critical state of the na-

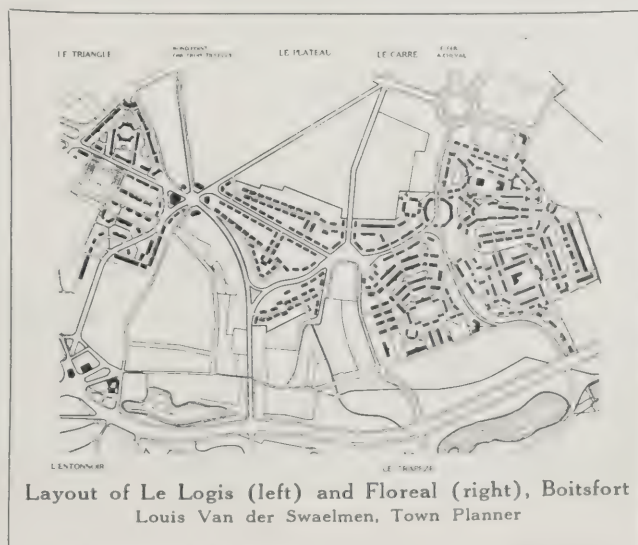
tional finances, due to reparation failures, has prevented an even larger output. Tenancy in these houses is limited to the groups having smallest incomes. The "white collar" people, only a trifle better off, were meanwhile feeling the pinch of the housing shortage and rising rents. Some of the more enterprising formed themselves into coöperative tenant societies, and applied for government loans and subsidies to build their own homes. After considerable controversy, they were granted loans, but no subsidies. With this the utmost has been done.

Two developments of this kind have been chosen for illustration because of their rare charm and distinction. They might almost be considered as one, since the same architect and town planner coöperated in the production of both; their sites are adjacent, and they are being developed in a harmonious though not identical manner. The locality, known as Boitsfort, is three or four miles to the southeast of Brussels on the line of what will be eventually an outer circle of boulevards. It is a hilly tract, commanding a wide view of rolling country, wooded and cultivated, and affording many excellent views.

Louis Van der Swaelmen is the town planner, and Jean Eggericx is the architect of the houses. To an extraordinary degree they have conceived their work as part and parcel of the landscape setting. Detached from their surroundings, these cottages and bungalows might seem unduly austere. As it is, one is supremely grateful for their sobriety and for the restful absence of ornament which would have attracted attention from what nature has so abundantly supplied. In the matter of color, too, instead of the usual straining after variety, the same scheme has been used throughout,—red tile roofs and brick walls covered with stucco of a soft, warm, "earthy" shade, difficult to define—neither khaki nor putty nor cream, but something between, which melts into

the landscape and makes this brand new settlement, even before it is finished, look as if it had grown there. If a layman be permitted to push the analysis further, I should say that the pleasure I received was also due to the good proportions and interesting and picturesque roofs of the buildings themselves.

The combined population of the two tracts will be between 5000 and 6000. Members of the Floreal society include mechanics, clerks and





Rear of Cottage, Kalfvaart Garden Suburbs for Working People, Built by the *Office des Regions Devastees* at Ypres
R. Acke, Architect



Part of Group of Homes at Floreal, Boitsfort
Jean Eggericx, Architect



Another View at Kalfvaart, Workingmen's Suburb at Ypres
R. Acke, Architect



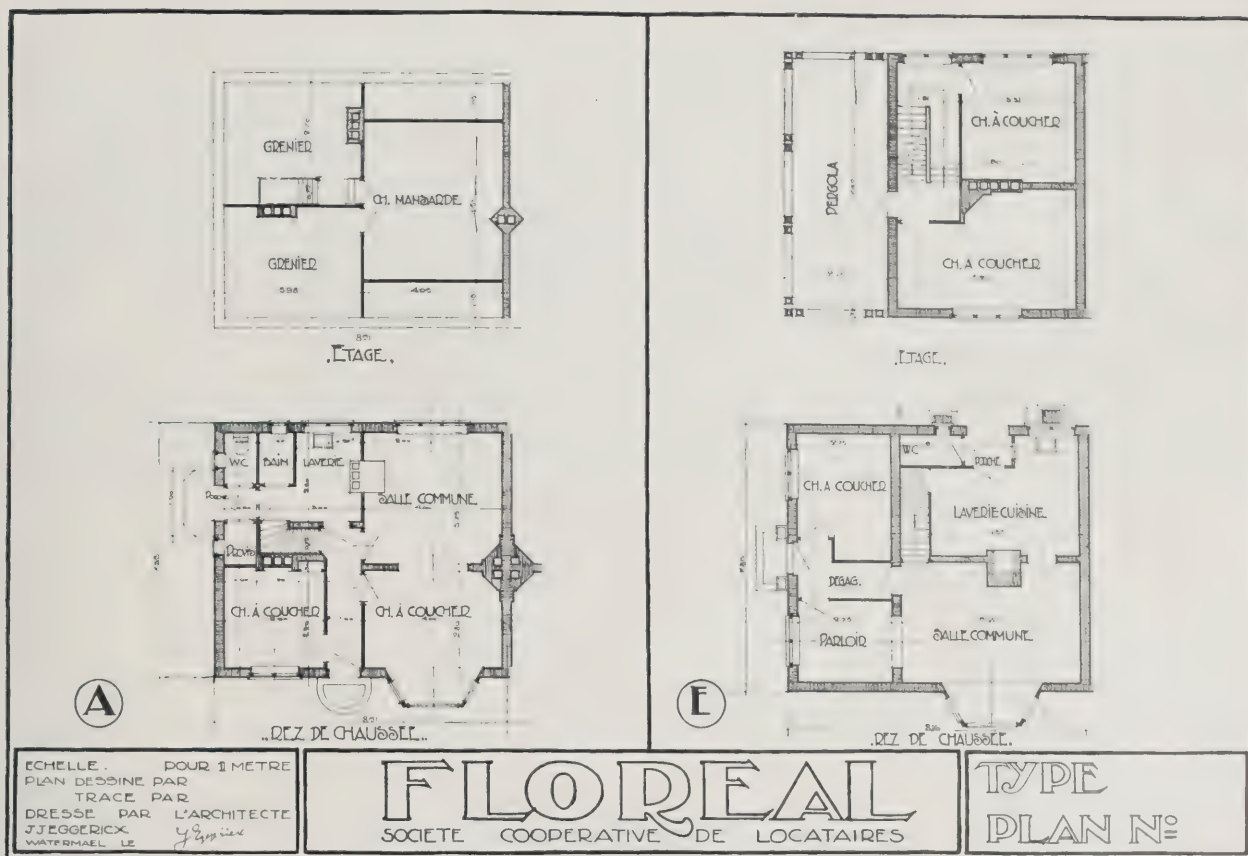
Ligy, Garden Suburb for Working People, Built at Ypres by the O. R. D.
H. De Bruyne and Ralph Verwilghen, Town Planners



Another View at Ligy, Ypres



Les Trois Tilleuls, Boitsfort
Jean Eggericx, Architect



Floor Plans of Two Types of Houses at Floreal; Five Rooms with Baths and Attics, and Six Rooms with Second Story Porches and Loggias
Jean Eggericx, Architect

some professional people. They have about 40 acres of land, on which 450 families will be housed. The work is about three-quarters completed. The cottages are built on two hillsides. Football fields and tennis courts are in the valley between. One hilltop will be crowned by a community house in a little park, and the other by an apartment house. Provision shops, with apartments above them, will be placed around the horse-shoe at the entrance to the estate. The other society, Le Logis, has a more homogeneous membership, consisting of employees of the General Savings Bank and similar institutions. Their athletic association owns considerable adjacent land, including the beautiful woods in the valley at the foot of the funnel, which will be preserved as a park. Le Logis' development is called Les Trois Tilleuls, from the three fine lindens around which the Rondpoint has been designed. Its acreage is twice that of Floreal, and it will ultimately contain 800 bungalows and cottages. Much of the surface is on fairly level plateaus, only the funnel section being on a hillside. Here we have the houses built on the concentric terraces of an amphitheater, and on one side of the road only, so as not to interfere with the views from one another's windows.

Building costs have been rigidly kept down. Bricks are made on the spot. An inexpensive built-in bathtub has been evolved of concrete, surfaced with the little black and white mosaics we use in bathroom

floors. A combination cooking range and heater has been introduced from Russia. Every franc has been made to work. But even in the simplest of these houses it would be a pleasure to live; they are so compact and convenient and well planned. I liked particularly a 22,000-franc bungalow, in the center of which is a large living room, extending from the front to the back of the house. This room has wide casement windows with window seats, a high brick mantel above a spacious fireplace, a floor of deep red tiles, and a most glorious view of hill and dale. I suspect that it was this view which led the architect, Mr. Eggericx, to build a house for himself just beyond the Trois Tilleuls boundary. In it he has used the same color scheme and general architectural style of the other houses, while permitting himself a few luxuries of detail and finish, the use of which economic necessity made impossible for the cooperative societies, but which are reasonable here.

EDITOR'S NOTE

FROM the November, 1921 issue of *The Builder*, published in London, this extract is taken: "Perhaps for British ears there is no name more closely associated with the war than that of Ypres, and I was keenly interested in the work done there, because in our Belgian 'study circles' the fate of that unfortunate town was followed with the closest interest, and statistics were received from time to time which en-



Bungalows at Les Trois Tilleuls, Boitsfort
Jean Eggericx, Architect

abled us to check off the houses which were being destroyed. Many a discussion took place as to what should be done after the war,—whether the ruins should be left or not, what streets should be widened, and so on. The reconstruction of the town lies still in the future, and one may hope that as work goes on a somewhat more progressive spirit may prevail. Apart from the work done by the *O.R.D.*, there is little evidence of there being any enlightened policy, and proposals of 'reconstruction' which I was shown were enough to make one shudder. Properly conceived designs for the planning of certain localities, which would give beauty and convenience and even save expense, have been rejected for mechanical, soulless ideas, which may be all very well for decorating a road with houses on each side, but which lack the very rudiments of either site-planning or town-planning which is really successful.

"There are two garden suburb schemes at Ypres, one known as Kalfvaart and the other as Ligy. The method of building is entirely different. In the former case, brick houses of excellent proportions, with red roofs showing up in strong contrast with the whitewashed walls, present an excellent picture as one approaches the town from St. Jean, and the *O.R.D.* has been able to put some idealism into its work. In the second instance the wooden frame building with mansard roof is being used, and although not so striking as that at Kalfvaart, the indications are that by the time the site is covered the effect will be quite good. The scheme is really an excellent example of what can be done by site-planning to secure decent street pictures, even when the elevations are strictly limited. It is here that the site-planner scores, and it is here, unfortunately, that countless English municipal housing schemes have so miserably failed during the past few years.

"At Kalfvaart not only was there a site-planning policy but an important town-planning proposition, and although the *O.R.D.* is not entrusted with the preparation of a town plan, its proposals will greatly facilitate the improvements which must be carried out sooner or later. An endeavor has been made to

reproduce Flemish village conditions rather than to import English garden city plans, and in the small 'place' an excellent effect is gained by bringing the building line right up to the line of the pavement.

"Still further to conserve the local 'atmosphere,' the architecture of the houses has been put into the hands of M. Acke, of Courtrai, an artist with an intimate knowledge of the district, who, without trying to reproduce archaeological features, which would be out of place in simple homes, has managed to preserve the general spirit of the little old houses of Ypres. In a like degree he has studied the typical disposition of the houses which made up the greater part of the old town, while correcting some of their obvious inconveniences. A striking feature of the houses is the utilization of heavy wooden sashes for the windows, which formerly had almost passed out of usage for generations. These have now been standardized and are being largely used in different parts of the country. The houses are mainly of three types, but all have their three bedrooms. They are a good deal larger than those at Roulers, and cost between 20,000 and 25,000 francs each. They were built during the summer of 1920. The work on the Ligy garden suburb was started about midsummer, 1921. The layout plan has a distinction all its own, and displays the versatility of the author. In addition to the central 'place,' to be used as a playground, there are several smaller 'places,' which evidently owe their inspiration to the work of Camillo Sitte. The introduction of so many pairs of houses has increased the site-planner's difficulties, but his use of setting back and the reservation of open areas have quite overcome these.

"As to Ypres itself, one is rather glad to get away from the place. And the town mayor's notice about this being 'holy ground,' from which no stone may be taken, does not always appeal, especially side by side with the catchpenny devices which exist for the allurements of the 'tripper'. And, incidentally, one may hope that all holy ground is not so expensive as Ypres hotels,—otherwise Heaven may be sparsely populated! Few could ever hope to attain it!"

The Chicago Union Station

GRAHAM, ANDERSON, PROBST & WHITE, Architects

By ALFRED SHAW

IT is a significant fact that a passenger terminal is one of the greatest visible expressions of a great railway system. Designed with impressive interior apartments and rising as a monumental structure in the center of a great city against a background of buildings of a more commercial nature, it represents more to the passing public than the terminus of important stretches of tracks and yards which run across the whole country. In addition, there is the fact that this kind of a building is used more by individuals of a community than any public structure, which suggests immediately the function of the building—namely, the reception and transfer of thousands of travelers from trains to lighter vehicles or sidewalks, and the reverse. Thus it was that with great enthusiasm the Chicago Union Station project was undertaken more than 15 years ago by the executives of the interested railroads, the architects, and the city fathers of Chicago. The ordinances governing the construction of the terminal and the many municipal improvements necessitated in connection with it were finally approved, and work was at length begun. It has now been entirely completed.

The general location is on approximately the same ground as the old Union Station, on the west bank of the Chicago River, between Harrison and Madison Streets, a stone arcade of vigorous design with heavy rustication screening it from the river. The two main buildings of the group, the Concourse and Headhouse, are located centrally in the plan, that is, between Adams Street and Jackson Boulevard, Clinton Street and the Chicago River. These two buildings are connected on the main station floor by using the space under Canal Street, thereby forming a passenger terminal which actually covers two of the large Chicago city blocks in area.

The track layout is for a double "stub-end" station, the only station of its kind in the country. There are 14 stub-tracks on the south and ten stub-tracks on the north, and in addition two other tracks which connect the two gridirons on the east side of the station along the bank of the river.

The available land for the whole terminal, which

was greatly enlarged from the property used by the old Union Station, was still so limited that the entire passenger facilities could not be placed between the two stub-end tracks. This, on the other hand, made possible the use of a single concourse, opening to the north for trains of the Chicago, Milwaukee & St. Paul Railroad, and to the south for trains of the Pennsylvania Railroad, the Chicago, Burlington & Quincy Railroad, and the Chicago & Alton Railroad. The design of the passenger concourse is carried out in steel and glass, somewhat similar to the design of the concourse of the Pennsylvania Station in New York, expressing frankly the structure and nature of the building. The central nave of the concourse has two smaller spans or aisles on either side, and is lighted by skylights in the roof and by windows in a clerestory, as well as by two great windows at either end, their motifs executed in terra cotta of a new and effective texture possessing decorative qualities.

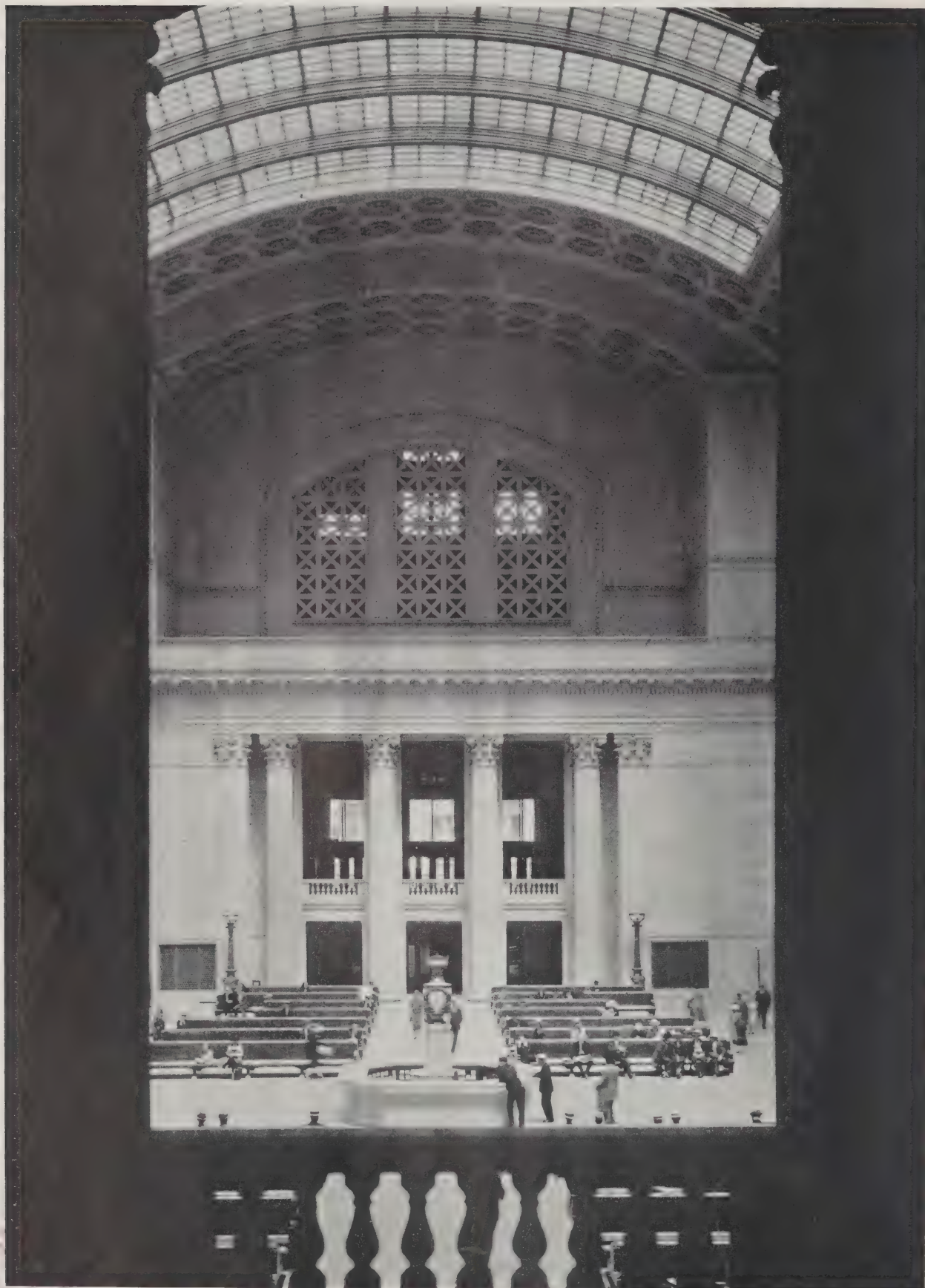
At each end of the concourse, that is, east and west, there is an entrance directly from the street, which is reached by ramps and monumental staircases, also in terra cotta and iron. On the station floor at the east end are shop fronts of a delicate design in metal, and at the west end the room opens up into a broad barrel-vaulted passage leading to various rooms designed for the convenience of passengers. Off this broad corridor at the right and left, immediately adjacent to the concourse, are the baggage checking and parcel checking rooms. The passage continues on out under Canal Street to

the two cab stands, which will be described later, finally reaching an ample ticket lobby where all railroad and Pullman ticket offices are grouped together; beyond this is the main waiting room, a monumental interior of classic design, the most imposing of the rooms in the station building.

The character of the main waiting room may be best described by referring to the thermal establishments of imperial Rome where, in the baths of Diocletian and the baths of Caracalla, the world witnessed for the first time the development, on a vast scale, of the system of round



River Front, Chicago Union Station



Photos, Jebbs & Knell, Inc.

MAIN WAITING ROOM, CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



PORTICO FACING CANAL STREET, CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS

arch and vault architecture. Those splendid structures, designed to furnish open space, recreation, light and air under cover to vast throngs of citizens, stand as the prototypes for the great concourses and waiting rooms in our modern railway stations, which are in reality the vestibules to our American cities.

This great hall is ornamented with a monumental Corinthian order, used in the openings as well as against the walls. The walls are laid up in Roman travertine, the color of which blends harmoniously with the soft green tones of the barrel-vaulted ceiling constructed of glass and steel, which rises 112 feet above the floor and lights the hall. The figures representing Day and Night, on the free-standing columns in this room, as well as the sculptural panels on the exterior, are the work of Henry Hering a New York sculptor. The general color treatment of the station is so handled as to express the actual materials used, and by means of painted surfaces a complete and harmonious scheme of interior is achieved. In the study of the interior color scheme, the station authorities and architects consulted with Jules Guerin, the eminent New York mural painter.

In the center of the west wall of the main waiting room is the entrance to the lunch room, adjacent to which is a quiet dining room away from the noise of the rest of the station, which provides a more leisurely type of service. Paneling in walnut forms a rich toned base around the walls of the room, the walls rising, light buff in color, to a coffered ceiling decorated in bright greens and brick red. This dining room is also approached through a small reception room off the main waiting room and from Clinton Street. On the north end of the west wall are located the women's waiting room, rest and toilet rooms, connecting with which is a beauty shop. At the south end is the barber shop, an interesting room with green tile walls, below which, in the basement, are located the toilets for men. The usual smoking room for men was intentionally omitted from the design of the station, perhaps as being unnecessary.

The exteriors of both the concourse and headhouse buildings are executed in Indiana limestone. The long colonnade of the headhouse, with the many stories of offices rising behind and above it, forms a monumental background for the concourse building when viewed from the east. As yet only eight stories of the headhouse have been built; the remaining 12 stories are expected to be erected at an early date. The headhouse building is 320 by 373 feet with colonnades and pilasters in the Roman Doric order running around the entire four sides. The set-backs on Jackson Boulevard and Adams Street form the cab drives. The office building portion of the structure sets back 20 feet from the street lines and runs around four sides of the central court, at the bottom of which is located the main waiting room.

The cab drives and passageways to the baggage room, located in the north and south set-backs just referred to, are among the most interesting features of the station. In the north and south pylons of the

Clinton Street facade are entrances to vehicle ramps which slope down so that at the line of Canal Street they are at the elevation of the main passenger terminal floor. At this point there is a small underground plaza where the cabs are loaded and unloaded. This plaza is at the ends of the connection under Canal Street, a great open area with a flat groin-vaulted ceiling. From the plaza the ramps turn and slope down to the west, and turn again toward each other to form a single drive down to the baggage concourse. Here is a large open area for trucking and a backing-up platform 400 feet long running along one side of the baggage handling area, which is approached also from the train platforms by the ramps already mentioned. This room, occupying the entire area under the passenger concourse, is likewise reached from the baggage check-room immediately above. In the operation of the station up to the present, the baggage handling has been found to be much more efficient than in any layout in operation elsewhere in the country.

The train sheds, which run north and south from the passenger concourse, to Harrison Street on the south and to Madison Street on the north, are of a new type developed from the "umbrella" shed. The whole area is completely protected from the weather, with smoke outlets immediately above the locomotive stacks, giving a direct exhaust into the air. A great increase in headroom above the passenger platforms is obtained here by a curved and pitched truss and roof of glass tile. The baggage platforms are left free of columns for easy trucking by an ingenious arrangement of cantilever trusses and columns, located at the centers of the passenger platforms. This makes for better service.

This is the first modern building in which a great system of streets for vehicles is contained entirely within the property lines. Ramps for teaming and passenger vehicles, as well as the backing-up area and unloading space for cabs, are all in the building, thus obviating the great inconvenience of having vehicles standing at curb lines on a street, as well as relieving the actual street traffic. In our congested modern cities this is considered an advantageous improvement. The station was opened for the public on April 18, 1925, although the formal opening was delayed until July 23, marking the completion of many years of constant effort on the part of railway engineers, the architects and city officials. A great terminal of this character, so important in its influence, represents the employment and heroic efforts of many men, men with vision and indomitable optimism, who kept the great undertaking always before their eyes; men who labored under electric lamps, who were relied upon for all kinds of minute mathematical calculations, and the multitude of other men, those disciples of tobacco and fresh air, who swung the hammers and set the rivets and the stones to make the great vision an enduring reality! The Chicago Union Station represents, today, the last word in the world's railroad terminals.

A Memorial Arch at Kingston, Ont.

By LEIGH FRENCH, JR.

ENTRANCE upon the field of war memorial design is in itself a challenge and an invitation to criticism from all quarters,—criticism that may be either adverse or laudatory. The war memorial touches an unusually wide range of interests and persons. It ordinarily represents a common and collective sacrifice on the part of the general public, which the people very naturally feel they have a deeply personal and intimate interest in commemorating. And just because of this common and collective interest, all sorts and conditions of men, from the bank president down to the grocer's boy, seem to consider it their bounden duty as well as their proper prerogative to take part in the inevitable criticism.

It is a splendid thing to stir up lively interest of this sort and to stimulate such all-round criticism. If it happened oftener and with respect to all kinds of buildings there would be a more definite architectural consciousness developed among laymen, even though some of the criticism might not always be well directed. But the prospect of being confronted by so eager an array of critics, quite ready to express opinions, sometimes induces on the part of the architect a state of mind close to stage fright, and impels him to a species of self-consciousness in designing that is nearly always unhappy in its results. Realizing that what he is about to do will be an object of searching scrutiny to a wide circle of observers who look to him to bring forth something very unusual

or striking, many an architect loses, for the time being, more or less of his accustomed poise and self-possession, takes leave of most of his better judgment and, in the frenzied endeavor to create something the like of which has not been seen before, commits sundry indiscretions or even produces monstrosities, which unfortunately are usually permanent.

If we take a cursory glance at a number of the war memorials that have been put up in both America and England since the termination of the Great War, it will be plainly apparent how large a part this self-conscious straining for effect has played; how much the anxious aim for achievement that shall have the stamp of novelty and fully measure up to public expectations has affected design; how far the forsaking of precedent has both stifled spontaneity and destroyed poise. It would be grossly unfair, of course, to make this censure general. A great many admirable war memorials have been designed and erected, and they richly deserve whatever commendation has been bestowed upon them; but, on the other hand, there are far too many memorials that have undeniably turned out disappointments, to say the least, although there was every ground at the outset to expect more gratifying performances. Many indeed have been the mistakes made.

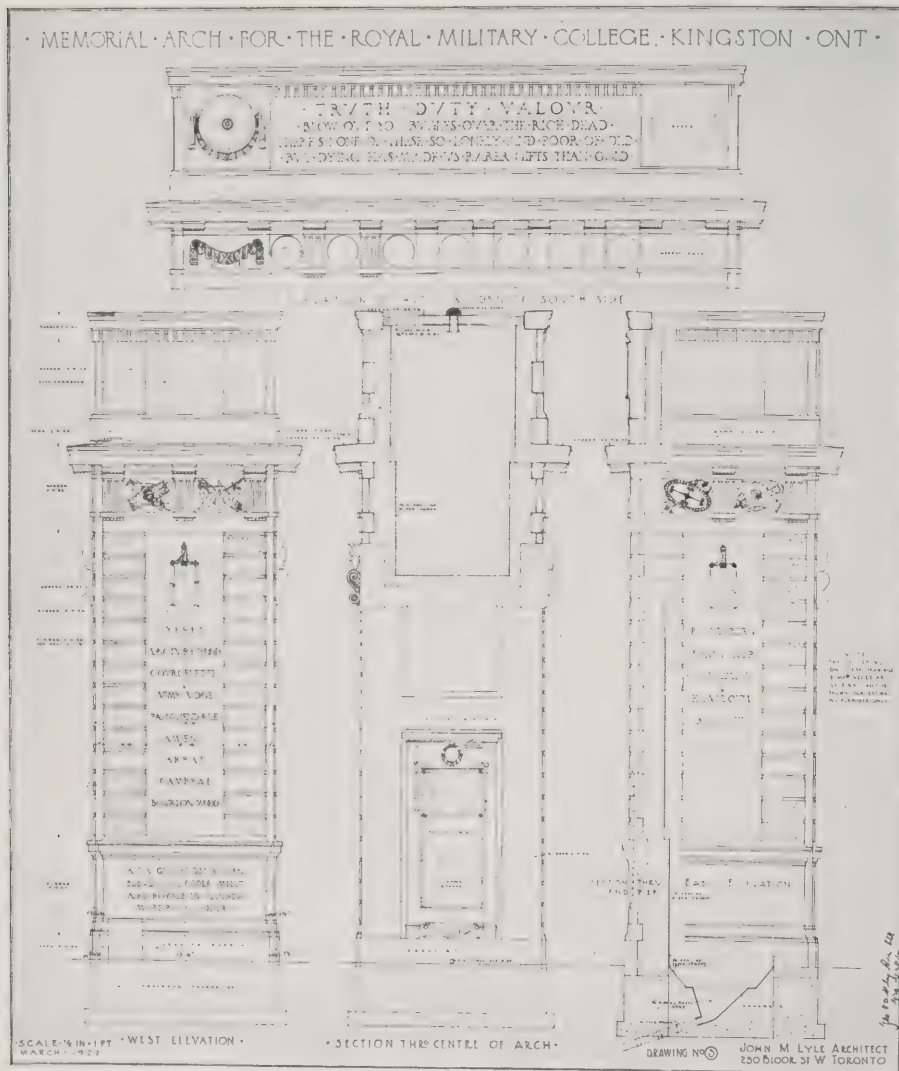
One of the most amazing instances of this sort of thing occurred not long after the close of the war. There was held in the galleries of the Royal Insti-



Photo Pringle & Booth

Memorial Arch, Royal Military College, Kingston, Ont.

John M. Lyle, Architect



Detail Drawings, Memorial Arch, Kingston, Ont.

John M. Lyle, Architect

tute of British Architects, in London, an exhibition of the designs submitted in competition for a monument to be erected at Zeebrugge to commemorate the naval action at that place. The site proposed presented every advantage for a memorial of distinguished character, and was really an inspiration in itself. The competition was open not only to British architects and sculptors but to those of France and Belgium as well. Out of all the many designs exhibited, only a very few merited any serious consideration at all as eventual possibilities. Some were feeble, some were hopelessly crude, others were grotesque, while several of them were frankly brutal. In general effect they ranged all the way from the absurdity of what would have made a good tea pavilion in a public park to the dreary semblance of a magnified unhewn monolith. The qualities of grace, dignity and fitness were conspicuous by their absence. Not the least noticeable characteristic of more than one scheme was the distorted and muddled scale manifested. After viewing the whole

show, it was impossible to escape the conclusion that the mental equilibrium of those who had sent these designs was still disturbed by fevered recollections of too recent tragedy—that and the sort of “stage fright” already noted. The general impression was anything but reassuring. By way of sharp contrast to all this, one may point to the sanity and excellence of some of the subsequent conceptions of war memorials, which later assumed tangible, structural form on both sides of the Atlantic,—rational conceptions, that showed an adequate grasp of the subject on the part of their authors. In these cases it had evidently been determined, with nicely balanced discernment before the structures took visible form, whether a war memorial should be architectural or sculptural or exhibit the harmonious combination of both of these arts.

In view of all the incoherence and uncertainty of aim that attended the projects for war memorials immedi-

ately after the events of November, 1918,—a state from which, by the way, we have not yet entirely emerged,—it is refreshing to point to the War Memorial at Kingston, Ont., as an outstanding example of coherent purpose and well considered form. It was designed by John M. Lyle, of Toronto, and erected by the College Club of the Royal Military College of Canada at Kingston, an establishment that corresponds to our West Point. The design for the Memorial was thrown open to a competition in which seven Canadian architects were invited to participate. Professor Ramsay Traquair, of McGill University, Montreal, was the judge, and the prize was awarded to Mr. Lyle. The accompanying illustrations show the Memorial as a monumental archway forming the principal entrance to the grounds of the College. Rising as it does from the level ground near the edge of a lake, it has every opportunity to display the vigorous conception that renders it an especially appropriate structure for the place it occupies and the character of the establish-

ment it adorns. The splendid sturdiness and strength of its aspect dominate the approach to the College, without any distracting elements or irrelevant features to detract from the excellent effect.

The memorial is constructed throughout of buff Indiana limestone, save for the base, which is of granite from the Province of Quebec, and the two large bronze tablets, set on each side within the archway, whereon are inscribed the names and rank of 155 officers, alumni of the College, who fell in the Great War or in previous wars. While speaking of the materials employed, a detail to which attention should be especially directed is the interesting variety of textures imparted to the limestone. No less than five distinct textures, in fact, are easily discernible. The mouldings display a rubbed finish; the quoins are worked in coarse point, giving a surface somewhat resembling fine vermiculation when seen from a little distance; the margins of the quoins are tooled with three bats to the inch; the attic story presents a sawn finish; and the face of the ashlar masonry is finely tooled and scored with steel wire filings. The result of this nicely studied textural treatment is

remarkably pleasing. The surface of the granite base exhibits an axe finish. It is rarely that one finds the subtleties of contrasting texture values more happily developed, particularly when the variations occur in one single material.

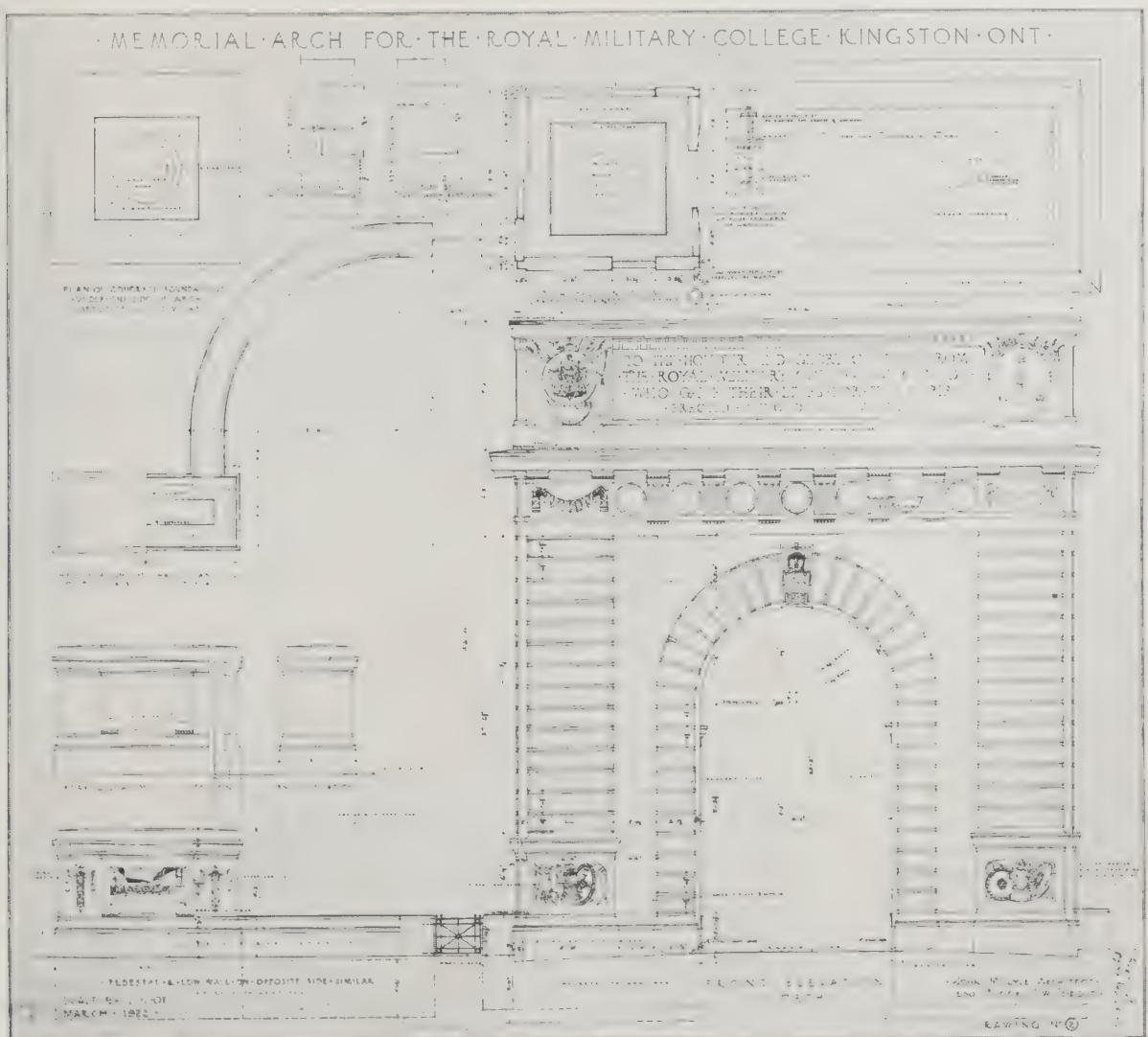
The facade of the arch toward the roadway is of what might be termed documentary import. The long panel of the attic story bears this inscription: TO THE GLORIOUS MEMORY OF THE EX-CADETS OF THE ROYAL MILITARY COLLEGE OF CANADA WHO GAVE THEIR LIVES FOR THE EMPIRE.

ERECTED ANNO DOMINI MCMXXIII.

At each end of this panel, carved in bold relief, are roundels surrounded by military emblems; on one roundel is carved the coat of arms of the College, and on the other the coat of arms of the Dominion of Canada. The other facade, facing toward the College, bears in the panel of the attic story the College motto,

TRUTH: DUTY: VALOUR

while immediately beneath it, cut in somewhat smaller lettering, are the lines from Rupert Brooke:



Front Elevation and Details, Memorial Arch, Kingston, Ont.

John M. Lyle, Architect

"Blow out, ye bugles, over the rich dead!

There's none of these so lonely and poor or old,
But, dying, has made us rarer gifts than gold."

The helmeted head, sculptured on the keystone crowning the archway of this south front, shows vigorous action, the mouth being open and seemingly shouting the "*Ave*" of the old Roman legionaries; the corresponding head on the north facade, toward the roadway outside, is in complete repose. These heads, as well as the rest of the sculptured enrichment on the arch, deserve more than merely passing notice. The carving throughout is instinct with fine, nervous quality and lively vigor. Other inscriptions occur on the bronze tablets inside the archway. At the top of one are the lines: "Hark how the Drums beat up again, For all true Soldiers, Gentlemen!" In the head of the opposite tablet is the inscription, "*Pro Deo et Patria*. Erected by the Royal Military College Club of Canada, Anno Domini, 1923." On the pedestal base eastward of the arch is carved the legend "*Je Me Souvien*" with reference to the French Canadian cadets of the College, a graceful tribute to their memory and to their sacrifices.

Apart from the various inscriptions, which unmistakably proclaim the martial and memorial character of the structure, symbolism has very appropriately played an important part in the scheme of decoration. The groupings of military attributes, empaneled above the base and in the frieze and at the ends of

the arch, are not the only items that emphasize by their emblematic character the purpose of the structure, for the force of allusion is seen in another feature also. The two tall panels on the outer sides of the arch show the sword of sacrifice piercing the names of the places of engagements in which fell the officers whose memory is perpetuated,—Mons, the Marne, Ypres, Vimy, Gallipoli, Passchendaele, Arras, Canal du Nord and other hard fought fields, the names of which will live forever in history.

While the memorial at Kingston is unmistakably of Classic inspiration, the architect has not set out to imitate any one particular work of antiquity. On the contrary, he has exercised independent, creative facility along with due respect for precedent and tradition, using them as aids and means to an end, not groveling before them as inexorable masters. In the freedom of his handling he has displayed a scholarly command of the situation and of the resources at his disposal. Without egotism, without any suggestion of the agonizing attempts at incoherent and delirious ultra-modernity so appallingly exemplified in some of the creations seen at the recent Paris Exposition, and without any of the troubled vagaries that have marked so much war memorial design, Mr. Lyle has pursued a calm and equable course and produced a piece of sound, decorous and vital architecture, eminently appropriate to its purpose, which it is a pleasure to chronicle here.



Detail, Front Elevation, Memorial Arch, Kingston, Ont.

John M. Lyle, Architect

ENGINEERING DEPARTMENT

Two-Way Reinforced Concrete Slab Construction

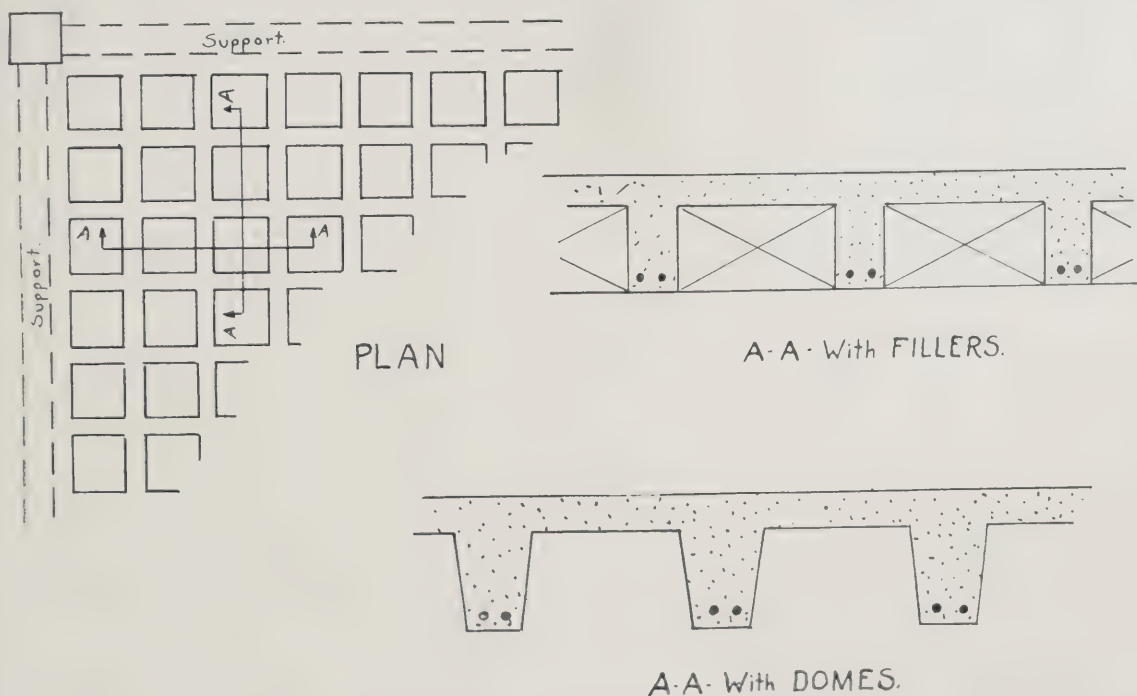
By K. F. JACKSON

IN dealing with the subject of two-way reinforcing in concrete construction, a distinction should be made between slab panels supported at the four corner points and those supported along the four sides. The first belong to the broad classification termed "flat-slabs," of which there are several varieties; the second, which are wholly different in their action and consequently in design and usefulness, and which are commonly described as "two-way slabs," will be discussed in the present article.

Generally considered, the two-way slab does not assume the importance which it should in construction; it has not come into its own, probably because of a lack of appreciation on the part of architects and engineers of its value. It is not yet instinctive with a designer to consider it unless it is manifestly apparent, as the structure assumes form, that it is the one type of construction most adaptable. In short, it might be said that it is now employed only when some circumstance or combination of circum-

stances virtually demands that the framing shall take that form. It is worthy of much more consideration; its peculiar advantages should exert a large influence in the laying out of a plan. It would frequently be of distinct benefit were the architecture conceived in such manner as to accommodate two-way framing. It has, in fact, many advantages.

As with other types of reinforced concrete construction, the two-way slab is represented by a variety of forms or systems. In all, however, the principles are the same, although each may possess its own particular feature rendering it most suitable for use under certain conditions. In passing, some of the best known of the systems will be enumerated and briefly described. To begin with, there is the solid concrete two-way reinforced concrete slab, the basic form and parent of all others. This slab consists simply of a flat plate containing two sets of reinforcing steel bars, both near the bottom, and one just above and at right angles to the other. It rests



Plan and Section of Two Types of Two-Way Concrete Floor Slabs

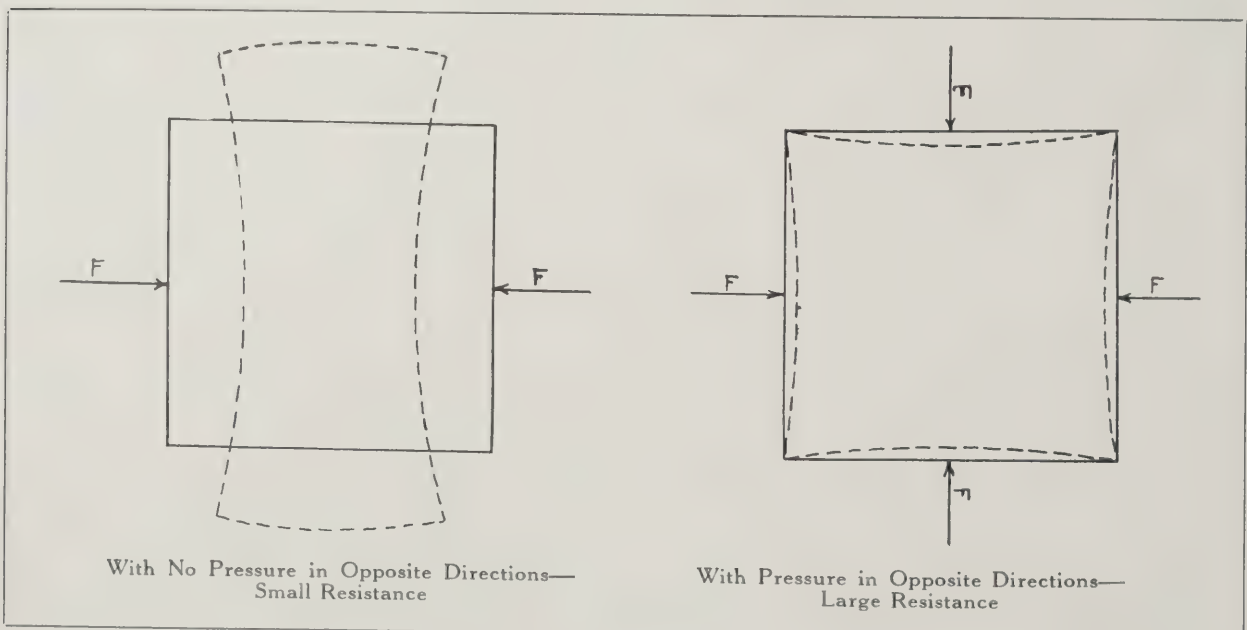
upon, or is monolithic with, some kind of support along each of its edges. Then there are the varieties in which the solid concrete is replaced by series of parallel and intersecting ribs or joists, these being formed by the introduction into the slab of some sort of incombustible hollow blocks. These blocks are laid on the wood formwork in rows and with spaces from 4 to 5 inches wide between them on all sides. Cross channels are thereby created, in the bottom of which are placed the steel bars with the required bending, and into which is poured the concrete. The slab may be carried up only to the tops of the blocks or fillers and stopped flush; or, as is more often the case, it can be continued to the point where the fillers are completely immersed and covered with a continuous uniform topping of concrete. In this way the joists become miniature beams of tee section. Other systems involve the use of terra cotta blocks with ends closed or with the block flues left open, permitting the inflow of concrete to whatever extent it will—30 per cent or more, probably. Also for this purpose gypsum block construction is used, and a comparatively new block of slag concrete is now being marketed. These blocks are manufactured by a high-pressure process and are of such consistency that the shell itself is capable of taking stress in the construction. Still another system is that in which actual voids or pockets are formed between joists by inverted basins of metal or wood.

All of the foregoing systems are equally suited to a reinforced concrete or structural steel-framed building. As already explained, each of these systems has its especial appeal or merit. In general, solid slabs are best for use when the spans are short, the building small, or the dead weight of little significance. The joist systems are best for use where the saving in weight, due to the voids, results in a saving in materials and labor throughout the superstructure and foundations,—the fillers being used

where a solid ceiling is desired, the domes where a pocket effect is not objectionable or where a ceiling of lath and plaster can be added. Some of the fillers are more fire-resistive than others and more effective in sound deadening. Some also provide a superior surface well adapted for receiving plaster.

The requirements for the use of a two-way slab are bays or panels, roughly square as opposed to long and narrow (although 90° angles are not essential), and a support, whether it be a beam or wall, along each side. By "roughly square" is meant a ratio of spans which does not exceed one and four-tenths to one, or one and six-tenths to one, depending upon the code under which the work is being designed. The most effective ratio of spans, considering the economy factor only, is from one to one up to one and three-tenths to one, or thereabouts.

As a result of the lack of complete data and on account of divergences of opinion in regard to two-way slabs, there is found considerable variation in their treatment in city building ordinances and codes, and there is common to all a tendency to "play safe." There are differences in the regulations as to the percentage of total load to be carried in the one direction and in the other; in the arrangement of reinforcing bars in the two sets, and within the sets; in the handling of the load imparted by the slab to its supporting member, whether to consider the member uniformly loaded, or whether its load is distributed according to the ordinates of a parabola. Because of these safe tendencies, all are undoubtedly satisfactory, although some favor certain parts of the construction unnecessarily and inconsistently, others, other parts; some approach nearer than others to providing the greatest resistance to stress where it is a maximum. The writer has never heard of an accidental failure in two-way construction. There is a vast inherent strength in two-way slabs, and therefore all methods of design in common practice are



sufficient. Briefly, the reason for this ultra strength peculiar to two-way slabs is twofold; first, the arch action, that is to say, the tendency for the panel to act as a unit like a flat dome; and second, the restraint placed upon the concrete, or in other words, the use of compressive forces in two directions.

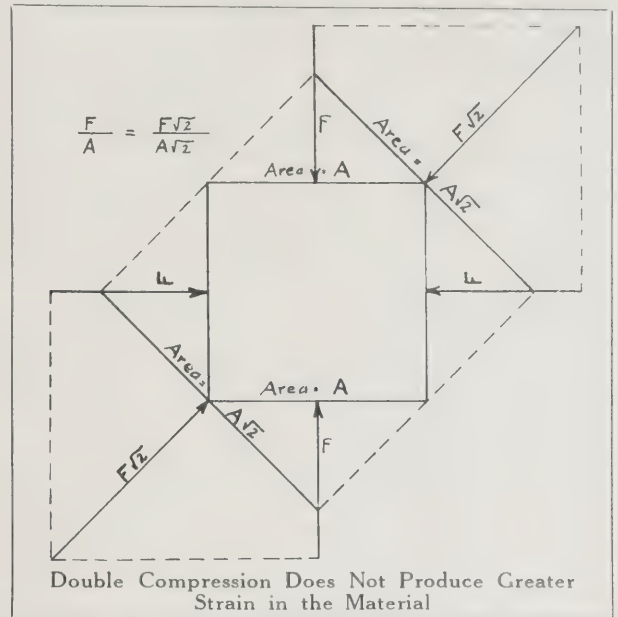
It is well known that a solid, being compressed in one direction and unrestrained against elongation in the other, has not the same power of resistance to the force exerted as has a similar solid under compression, but with a restraining force against distortion the other way. For illustration, assume a cube of rubber with pressure applied to two opposite faces. The rubber is distorted rather easily, the two faces, upon which the forces act, crushing closer together, the other two faces being forced outwards. The top face of the cube, originally square, becomes rectangular. If, now, at the time of application of pressure to the two opposite faces force is also acting upon the other two faces, the resistance of the rubber to both compressive forces is greatly increased. For the same reason and in the same manner, concrete, in a slab reinforced two ways and thereby subjected to compression in two directions at right angles, has a greater resistance to each than would the same concrete in a one-way slab which sets up compression in one direction only. This double compression, furthermore, does not produce any greater strain in the material itself. This fact may be easily proved. If the forces F - F act in one direction on a cube of concrete, the area of the face of which is A , a certain unit compressive stress is

developed which is equal to $\frac{F}{A}$. If another set of

forces F - F are applied to the cube at right angles to the first and of the same intensity, a unit stress of $\frac{F}{A}$ will likewise be developed in that direction.

Since any two adjacent forces may be combined in a resultant, represented graphically as the diagonal of the force diagram, two of the adjacent F 's may be combined, as may also the other two, and the result is two forces, each equal to $F\sqrt{2}$ and opposed.

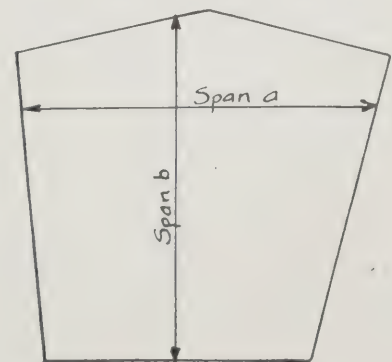
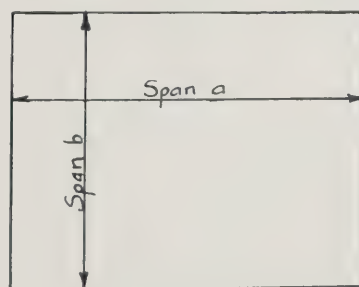
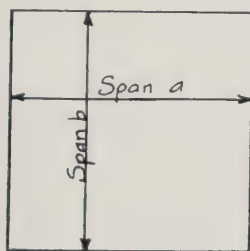
Each, however, acts on an area which is $A\sqrt{2}$, so that the unit stress produced equals $\frac{F\sqrt{2}}{A\sqrt{2}}$, which equals $\frac{F}{A}$, the same as is caused by either of the two original compressive actions. The same is true



whether the two compressive actions are equal or not; the strain produced by the two is no greater than that produced by either of the two alone.

The foregoing facts lead up to the point where the economies and merits of two-way slabs may be presented under five general heads. First, either thinner floor slabs are provided, which means a saving in total height or a greater clear height per story, or a greater number of stories; or else with a prescribed thickness of floor slab, fewer beams are required as supports. In both circumstances a saving in material and labor is effected; there are required less concrete, less steel, less formwork, and less wall material per unit of floor area, all this economical.

Second, there is a reduction in dead weight, which



Economies of Two-Way Concrete Slab Construction Are Explained in This Article

in terms of architectural effect means fewer or smaller columns. The reduced requirements for foundations, and the decreased space occupied by columns, result in more and better available floor area.

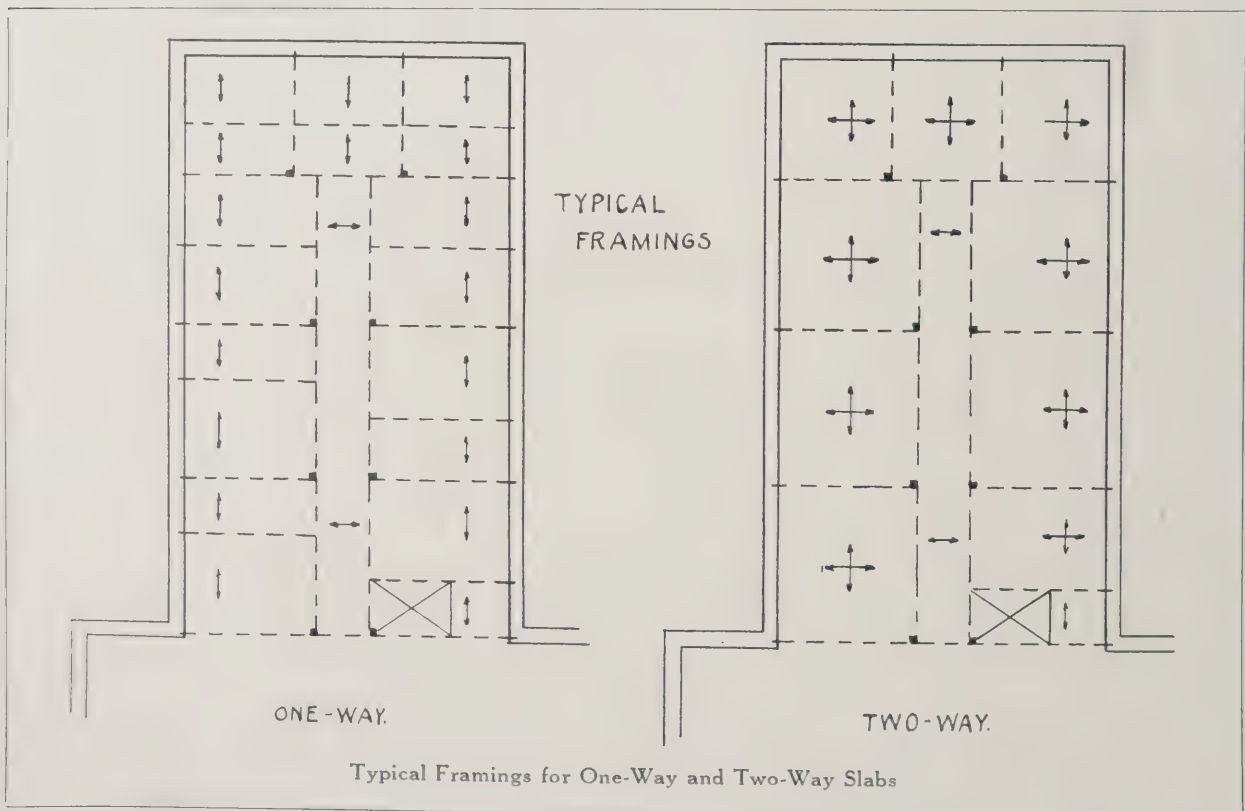
Third, the greater spans which can be carried with slabs and beams limited as to size allow more freedom in the location of columns. This has an immediate appeal and needs no further elaboration.

Fourth, a structure is provided which possesses stiffness and stability. The slabs in themselves are peculiarly fitted to sustain concentrated or moving loads. The crossed system of reinforcing tends to disperse concentrations over wide areas, and hence more readily withstands them. In like manner, with moving loads the shock of impact is lessened by virtue of the spreading of load effect. Focusing attention on the beams, there is a similar condition involved. With strong carrying members in both directions, there results a building which is extremely stiff. The frame is tied and braced throughout its length and breadth. Still another consideration is that the loads are most rapidly brought to the columns and down to the ground. Floor load moves directly to the beams and thence to the columns. The intermediate transfer from beams to girders is eliminated; there is one less chance of there being a weak link, the weakest of which determines the strength of the structure. It is an axiom of life that the elimination of intermediate handling, of the "middleman," is a step in the direction of economy.

Last of all, the concrete is utilized twice. There are two separate systems of reinforcement to take care of the tensile stresses, but the same concrete

serves for the compression in both directions. So far as the concrete is concerned, there are virtually two slabs in one. Here is a genuine item of economy. Also, through the agency of double compression and the resultant enhanced power of resistance in the concrete, there is opportunity to provide a super-factor of safety, or to accomplish a saving by reduction of the live load or increase in the allowable stress, contingent for its amount upon the area of the panel. This saving is permitted by many building codes, notably that of Boston, which provides for a 10 per cent reduction of prescribed live load where the area exceeds 100 square feet, 15 per cent where it exceeds 200, and finally, 25 per cent where more than 300 square feet comprise the supported area of a single two-way panel. Two-way panels of an area up to 1000 square feet or over are quite within the range of possibility and feasibility. The only buildings in which live load reductions are inadvisable are those of the assembly hall or storage warehouse type.

To summarize briefly in conclusion, the necessary conditions for two-way slabs are panels nearly square or with spans at 90° approximately equal, and available supports along all sides. In proceeding with this method of framing, good architectural effects may be procured, and there follow freedom in column location, thin floors, few beams, light weight of construction, good provision for concentrated and moving loads, great strength and stability, and last but not least, economy. Architects, engineers and builders must secure the most at the least cost, and the possibilities of this system are great.



The Villa Maria, Southampton, N. Y.

EDWARD P. MELLON, Architect

ON the southern side of Long Island there exists a sand bar which separates from the sea Great South Bay and Shinnecock Bay, and which has a length of about 50 miles, with a fairly even breadth of about 1000 feet. On the sea side of the bar there exists a continuous line of dunes, some of which rise to a height of 50 or 60 feet. At the extreme western end of this bar stands the far-famed Fire Island Light, and at the extreme eastern end the bar connects with the mainland of Long Island, at which point stands the house known as the "Villa Maria." This junction of bar and mainland forms approximately the western limit of the historic and picturesque town of Southampton.

No large houses had been erected on this strip of sand bar until its possibilities were seen and appreciated by the architect of the "Villa Maria." The location appeared to lend itself as an exceptional site, with its outlook and environment suggestive of the Italian coast, for the creation of an early Tuscan house, such as are seen scattered here and there among the friendly hills of ancient Tuscany. The beauty and natural contours of the dunes played an impor-

tant part in the layout of the property itself, as well as in the designing of the buildings. As it was desired that the dunes should not in any way be disturbed, the buildings of the estate were designed to conform to them. In solving any architectural problem the architect generally succeeds best when he designs his building to conform to the topography of the property and its environment, rather than when he attempts to make the property conform to the buildings. Color was here one of the chief features to be considered. In this particular section of Long Island during most of the summer the sky is as blue as that of Italy, and the sea on the one side and Shinnecock Bay on the other possess at times the vivid blues of the Mediterranean. As the dunes are covered by long, waving, gray-green grass, and as the beach at this point is broad and clean, it was thought best to make the color of the house conform to that of the beach sand, which contrasts naturally in its color with the dune grass and the sea.

The development of the property and the erection of the buildings on this estate formed a pioneer undertaking. No road or other means of access



The Villa Maria, House of Edward P. Mellon, Esq.
Southampton, N. Y.



Detail, Facade, The Villa Maria, Southampton, N. Y.

Edward P. Mellon, Architect

existed on this piece of land until after the "Villa Maria" was begun, when Meadow Lane, 50 feet wide, was built to and through the property. On the westerly side of the estate lies one of the highest dunes along the coast, and it was considered desirable to locate the house in such a position as to gain the protection from the prevailing westerly winds afforded by this dune. Therefore, the walls of the house and the property were designed to conform to the natural undulation of the dunes. This necessitated making the northerly or entrance side

of the house three stories in height, and the southerly or ocean side of but two stories. The level of the main floor is 42 feet above low tide. Advantage was taken of the existing depressions on the property for the location of the driveway, entrance and service courts and gardens; also an open lawn or vista, lined on both sides with high hedges, was constructed from the entrance court through the length of the property to provide a view of Shinnecock Bay, which at this point is known as Taylor's Creek. As the sand bar provides no soil, top soil for the



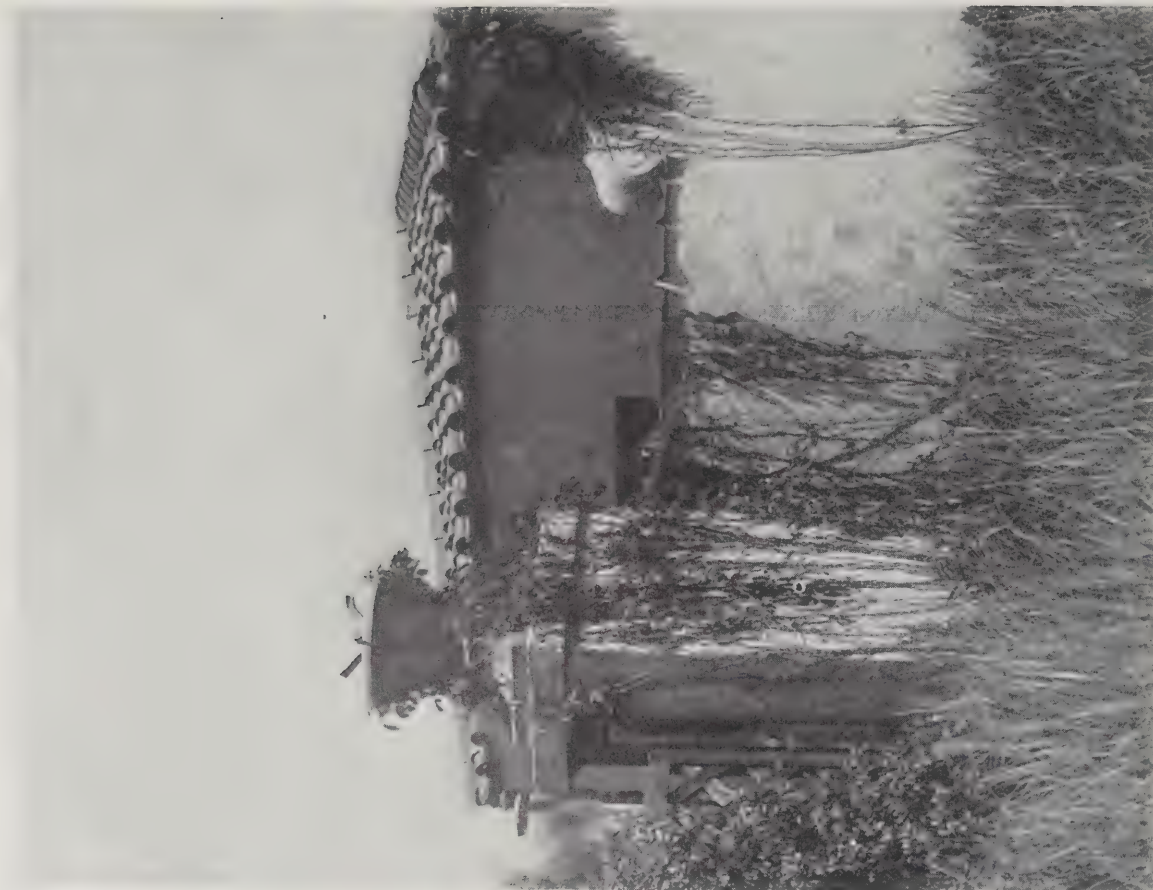
Driveway to Entrance, The Villa Maria, Southampton, N. Y.

Edward P. Mellon, Architect

vista lawn and gardens had to be brought to the site, and the property was filled to a depth of 6 feet. This rich surface soil, together with the moisture of the sea air, makes possible in the gardens the production of the finest varieties and the greatest abundance of flowers and vegetables which can be had.

The brilliant sunlight, which during most of the year prevails in this district, equals in its intensity the sunlight of Italy, and casts the deep shadows on which Italian buildings are so dependent for coloring and contrast. This contrast of color was height-

ened by the variation obtained in mixing and applying the stucco, each wheelbarrow-load of which was mixed separately with darker colors, so that when applied there was wide variation. The finished coat of stucco, which was made smooth in texture although uneven in surface, weathered rapidly, so that the house is now beautifully streaked in places, as the result not only of heavy rains which at some periods of the year prevail in this locality, but also on account of exposure to the sea air. This weathering gives the impression that the buildings have



DETAIL OF THE CHAUFER'S COTTAGE



LATTICE CONNECTING GARAGE AND COTTAGE

THE VILLA MARIA, SOUTHAMPTON, N. Y.
EDWARD P. MELLON, ARCHITECT



DETAIL, LIVING ROOM
THE VILLA MARIA, SOUTHAMPTON, N. Y.
EDWARD P. MELLON, ARCHITECT



Loggia, The Villa Maria, Southampton, N. Y.



Dressing Room, The Villa Maria, Southampton, N. Y.

been standing for decades, though actually they were erected less than two years ago, but have aged quickly.

The architectural detail of the main entrance is executed in honed stone, above which, in a recessed plaster panel painted a deep sky blue, is a bas-relief of the Virgin and Child. Around the smaller win-

dows the wide raised stucco bands are painted a deep seal brown. The unglazed tiles used for the roofs and for the copings of the property walls were specially designed and made by hand for these buildings; they vary in color from deep brown to soft red and orange, and are laid in irregular lines and grouted



Dining Room, The Villa Maria, Southampton, N. Y.



Garden Gate, The Villa Maria, Southampton, N. Y.



Stairway, The Villa Maria, Southampton, N. Y.

with cement to give the impression of age. The interior and exterior ironwork, which is mostly old, was selected and bought in Italy by the architect-owner. The garage and chauffeur's cottage, which are located on the side of Meadow Lane opposite the main property, are built into the main wall, fol-

lowing a precedent often adopted in Italian country architecture. The house, which is fireproof and absolutely dry even during damp and foggy weather, is constructed of terra cotta blocks covered with stucco, and the floors are built of reinforced concrete. The interior walls are finished in rough, un-



Living Room, The Villa Maria, Southampton, N. Y.

dulated plaster and tinted a number of various delicate colors, which give the effect of mother of pearl. There is no trim anywhere in the house, the plaster being returned back against the window frames. The window sills throughout the house are formed of dark red tile, which are also used for the floors of the bathrooms. Every window of the house has an extensive water view. The finished floors, mostly of black and white marble, having an unusual texture and patina, were taken from old buildings. In one or two instances the floors are covered with imported, antique, dark mottled red tiles. The stone mantels throughout the house were purchased in Perugia previous to the war, so that there was no trouble in taking them directly from the old buildings in which they were found, and shipping them.

Particular attention should be called to the very unusual frieze which runs around the dining room. This frieze, of soft blue and gold, was taken out of the famous Torlonia Palace in Rome, which was torn down to permit of the erection of the Victor Emanuel Monument on the Piazza Venezia. The frescoes on the walls of the dining room were also taken from the same palace. The library walls are painted a rich, brilliant gold, highly varnished, and the doors and bookcases are made of dark walnut, with the panels picked out in gold. The semi-circular staircase is constructed of cement painted white, with the sharp edges worn off to simulate the results of wear.

Most of the hangings, furniture and pictures in the "Villa Maria" were purchased directly from their original owners in Italy and Spain, although to meet the American demand for comfort, a few pieces of English furniture were introduced and so arranged as to form an exceedingly harmonious effect, in conformity with the character of the house itself. Furniture of widely different types is here found in complete agreement.

Where a home is designed and planned in a definite, historic architectural style, it gains greatly when into its fabric there are built details from old buildings, and when its furnishings are at least partially pieces belonging to the period represented. This is particularly true when the architectural type being interpreted is as strong and vigorous as the Italian or Spanish, and, as has already been suggested, the Villa Maria owes much of its interest to the use of mantels, wrought iron, tiles and terra cotta which have been made parts of the actual structure, and particularly to the use of interior fittings, such as furniture, fabrics, paintings and other objects. Due largely to the use of these old details of structure and furnishing, the Villa Maria suggests today not the usual American country house, new and likely to be a trifle raw, but an old villa in Italy, weathered by the sun and rain of many years, and filled with the treasures in the way of furnishings which accumulate during several generations in an Italian country home.



Garage and Chauffeur's Cottage, The Villa Maria, Southampton, N. Y.

The Skyscraper in New York

By EDWARD RUSH DUER

THIS is a setting down of some impressions that the skyscraper makes upon me,—an average man, quite uninstructed in architecture, engineering and civic planning, equipped for the task only with the modern citizen's hazy, superficial knowledge of too many subjects. I am a very bull's-eye of a man, in that I represent that happy center of mediocrity which most architects and all politicians aim to hit. Such being my situation, I feel privileged to discourse on the skyscraper, or what you will, without responsibility to anyone, in the firm belief that these introductory lines have the merit of absolving me in advance from all charges of pretense to any knowledge of the canons of art.

I

IT is obvious that the largest American cities are fast being rebuilt as great aggregations of skyscrapers. This is particularly true of New York, where the skyscraper originated (though Chicago disputes this), where it has reached its greatest development, and whence it has spread throughout the length and breadth of this country. Canada has adopted it in moderation, Europe not at all as yet. Increasing land values in the lower part of Manhattan Island and within the "Loop" in Chicago resulted in a demand for greater revenues from the buildings within those areas. Accordingly, the development of a steel structure that would carry more stories

than could be supported by bearing walls was undertaken by the engineer, and his successful accomplishment was presented to the architect, who was expected to dress the evolved framework in appropriate clothes. The result of their joint efforts has been a tremendous triumph—at any rate for the engineer.

The engineer's responsibility ends when he has successfully conformed to the regulations of the various departments of city government, and his object is achieved if he has produced a *safe* structure and satisfied his client's demands. He is not concerned with the outward *appearance* of his building, and is quite indifferent to it as a contribution to the livableness of the city. Where thus the responsibilities of the engineer end, those of the architect begin. More often than not they may be one and the same man, yet the purposes of this article will best be served by regarding him as two. The public gives no thought to the architect's work. The attention of the man in the street is entirely focused on the spectacular adding of story on top of story. His admiration and the intense pride which still inspires the question put to every visiting foreigner—"What do you think of our high buildings?"—mean altogether, or have meant until recently, admiration of the engineer's performance, a worship of a thing big and practical accomplished,—something "American."

What to the engineer has been no more than a practical and straightforward problem, the solution



Photo. Fairchild Aerial Surveys, Inc.

Airplane View, Grand Central District, New York, Showing Shelton Hotel



Photo. Kenneth Clark

American Radiator Building, New York
Raymond M. Hood, Architect

of which has meant, however, a highly important development of his craft, must, when he first faced it, have appeared to the architect as an invitation to a voyage to nowhere on a completely uncharted sea. I have no means of knowing, but I am nevertheless persuaded that our leading architects have neither liked the skyscraper nor approved of it. It is only within the last few years, recognizing its economic necessity, I assume, and the consequent inevitability of its spread, that the men at the top of their profession have undertaken the work of designing it. The improvement that has only recently begun to show would seem to justify and to prove this theory.

To men steeped in the traditions of the past, and nowhere is precedent so studied and so venerated as in the architectural profession, the advent of the skyscraper could have propounded nothing less than a revolutionary problem,—I had almost said “revolutionary.” To be asked to design an interpretation of steel beams laid at right angles to each other! Undoubtedly the first reaction to this demand constituted objection Number One. A further and even more serious objection (Number Two) was the disproportionate size of the colossus to its environment, and the gloomy, canyoned streets that resulted from its overwhelming height. It was, of course, impossible for the best architectural minds to endorse the

idea of denying or disguising the steel construction by dressing it in borrowed Gothic and Romanesque plumes (with the pretense, insisted upon over and over again, that a lot of little columns and arches and pilasters were supporting the vast weights supposedly superimposed upon them) which characterized the efforts of the commercial architect-builder who designed the first “coverings.” It was equally impossible to ignore the advent of a new factor in American civic life. Here was unquestionably the dawning of an epoch in the community's existence which called with increasing insistence on architecture to express its ideals. Is not this the Iron Age? Then, in its great interpretative capacity, must architecture proclaim it to a waiting and expectant world!

The call has apparently been loud enough and insistent enough and (let us not be ashamed to admit it) financially promising enough to attract some of the “best minds” and to overcome their objections. The results are beginning to appear here and there, results in which attempts at disguise and denial are done away with, and in which the steel uprights, the main support of the structure underneath, are emphasized boldly and simply in the long vertical lines of the facade, lines which run the full height of the building and which serve to accentuate this, its most distinctive feature. It is a long step forward when the truth is at last fearlessly faced and asserted, and the form of the steel structure thus acknowledged, its spirit caught and expressed. This spirit is not only a revelation of what is underneath; it is framework, steel, commerce, trade, the age itself idealized; the particular purpose of the building is indicated; it is all these taken at their best, their sordidness forgotten, their high and legitimate aspirations alone remaining. Buildings so conceived and so executed are as yet but few, very few, in number, for let us not deceive ourselves by assuming that mere masses of masonry must necessarily be architecture, though in the mist their outlines be interesting, or impressive!

II

EFFORT during the last 25 or 30 years to find an appropriate expression for the new city, which New York is constructing on the wreckage of her past, has resulted successfully in that certain standards have been raised whose ennobling influence, it is to be hoped, will be very far reaching. Unfortunately, however, the story of the new New York does not promise to be simple in its essentials when finally told. The way out from its present welter of architectural confusion is only faintly indicated as yet; nor do we seem to be very clear as to the method of solving a number of other problems to which the skyscraper has contributed complications of its own. Two of these problems are causing considerable concern at present, and will probably cause a great deal more later on; they are (1) traffic congestion, which is constantly becoming more and more of a problem, due to the continual crowding of very high buildings within a limited area, as a palliative for which

double- and triple-decked streets are talked of, though that sounds very dreary and depressing to me; and (2) a sociological problem involved in the herding of thousands of substantial middle class families into cramped and restricted apartments. I don't know how they will ever solve that problem comfortably, unless the tenants avoid having any children—or very few—or move to the country. To lose the most valuable class of its citizens, through not providing adequate houses for them, leaves the city in the unbalanced possession of the very rich and the very poor,—not a satisfactory civic condition. To be fair, the skyscraper should not be held responsible for the latter problem. Increase of population and high costs of living are the real causes behind it.

However, we must bear in mind that it is no light task for such a vast and heterogeneous city to rebuild itself intelligently within a comparatively short period of time, while concurrently it has been increasing its population at an unheard-of rate, and more disturbing still has been the radically changing character thereof. How could all these extraordinary complications be foreseen, and provided against? How could there readily be found a fixed and harmonious architectural expression for such a tumultuous community? I do not mean to say that if there were such a thing as *static* chaos it could not be architecturally expressed; but surely it is not surprising that the *dynamic* chaos which has been New York during the first quarter of the twentieth century has baffled the effort to express it. If there is any evidence, however slight, of that expression appearing today, we may be sure it is because the city is beginning to find itself, and because its character and its meaning are taking fresh forms to such extent as will permit the architect to cognize them.

In what style is this character and meaning being expressed in those few skyscrapers which I have claimed reveal the spirit of the new era? What is the new standard that is being raised? There are two of several buildings which seem to me to provide very satisfying answers to these questions. One is the Shelton Hotel on Lexington Avenue. The other is the office building of the American Radiator Company, opposite Bryant Park. They have nothing to do with Europe or the past; they are symptomatic of America, and they are conceived in a spirit which so far as I know represents this country's only contribution to architecture of an entirely original style. These buildings are not beautiful,—they are, on the contrary, rather grim, which is obviously due to their color, though I should be inclined to believe that their contours contribute even more to this effect. In the case of the Radiator building there is a grotesqueness and a hint of *bisarrerie* that is delightful. But the extraordinary thing, to my mind, is the successful treatment of the heights. They are both quite evidently very tall buildings, and yet one instinctively asks—why shouldn't they be? And indeed even more than that,—for were they not as tall as they are their significance would be lost, and in the case of the



Shelton Hotel, New York
Arthur Loomis Harmon, Architect

Radiator building the effect would be merely absurd. If these intuitions of mine are approximately correct, does it not follow then that height and design are so interwoven in the new style as to be indistinguishable the one from the other? And this, I cannot help but believe, must be a very marvelous accomplishment; for up to the present time the disproportionate height of the skyscraper has been overpoweringly and unpleasantly prominent. Even the much admired Woolworth Tower has always impressed me more by its extreme height than by its undoubted beauty. In other words, in looking at it, I think of the two things separately; and I suppose that is because its style is reminiscent of the days of bearing walls, and of heights that were attainable without elevators. Its beauty to be truly enjoyed must be viewed down some long perspective, or from the water; but then we are judging it by standards of another time, and subconsciously fooling ourselves by placing it outside the new development. The rather ridiculous idea has often occurred to me that the Woolworth Tower in its distinguished Gothic dress is as inappropriately placed on its present site as the Statue of Liberty would be were that heroic lady removed from her island to the City Hall Park. Our traditional knowledge of statues would constantly remind us of the pleasure we

might enjoy were her size reduced to such proportions as our glances could take in and comprehend!

It took considerable time and a great deal of bad architecture to learn that in the interests of truth the engineer's work must be interpreted and not disguised. When that point was reached, a few fine buildings were erected, of which the Woolworth Tower was far and away the most successful. The second important step has now been taken,—the spirit of the giant building has been at last found.

I do not think I exaggerate the seriousness of the creation of a style which one might say *is* the skyscraper. New York has embarked, for better or worse, on a career of reconstruction involving high buildings almost exclusively. It becomes therefore a matter of first importance to her that the styles in which these buildings are designed should fit their sizes, their purposes, their time, should exhibit the working of intellect, and should inspire a sympathetic understanding among the people,—in short that the styles should be *architecture*, and not decoration only, nor mere walls of deadly plainness.

It savors something of the heroic—or is it delirium?—this crashing ahead of New York into the unknown,—this destroying of her past, both bad and good,—this scrapping of the work of Stanford White and Richard M. Hunt, who were with us only yesterday, along with the contractor's obsolete jobs. Not satisfied with anything that has been offered her, is New York reaching out to high heaven for some tremendous expression almost beyond men's power to conceive,—or is it merely ruthless mate-

rialism, rank utilitarianism amounting almost to a hatred of the beautiful as a weak and contemptible diversion? Of course it is neither the one extreme nor the other. While the community's attention is concentrated almost exclusively on earning its living and on solving problems of transportation, the reckless real estate speculator has been given a free hand, and to his selfish skyscraping developments every quarter of the town has been surrendered. Our parks are walled in; our avenues are sunless; architecture has been neglected. But the American architect did not allow himself to be neglected for long. He may have sighed over the destruction of what he had already done for New York, but he did not hesitate to come to grips with this new situation, discouraging and disheartening as it may have appeared. The thing that happened was his combination with industry in the latter's desire to advertise itself appealingly! Hence the Woolworth Tower and the buildings of the new development that I have cited as two of its leading and conspicuous examples.

The new style is in part a justification of the destruction of the past. The question hopefully arises,—will it stimulate a taste which, increasing by what it feeds on, will demand satisfaction through a curbing of the speculator, and through the establishment of segregated areas, where some architectural peace and aspiration may be enjoyed? Certainly if the new style expresses adequately and profoundly the modern American civic ideals, it will not fail of recognition, and its very truth is the force which will surely establish it. The question is interesting indeed.



Photo. Fairchild Aerial Surveys, Inc.

Aërial View of Numerous Recent Examples of Setback Buildings

SMALL BUILDINGS

Designing the Small City Hotel

By WILLIAM L. STODDART

IT is safe to say that there are few architectural projects, if any, that must fulfill individual requirements more exactly than the small hotel. In this classification are grouped hotels of from 100 to 350 rooms, and figures gathered throughout the country show that these are vastly more numerous than larger hotels, and that they represent the real substance of the country's hotel business, the big hotels being the "high spots." Every traveler from Europe is impressed by the American hotel, by its service, by its comfort and attractiveness. And those of us who look back to the smaller, and even the

larger, hotels of 50 years ago must be equally impressed. We take no vain stand, then, when we point with pride to the hotel of today, and see in it one of our most successful and really national achievements. The hotel is definitely a national quite as much as it is a local institution, for one hotel follows another in an unbroken chain across the continent, and from north to south. Much of life in this country, both socially and commercially, is lived in the hotel, and the smaller the town the more keenly is the modernity of its best hotel regarded as the index or measure of the progressiveness and prosperity of the community.



George Washington Hotel, Washington, Pa.
William L. Stoddart, Architect



Hotel Patrick Henry, Roanoke, Va.
William L. Stoddart, Architect

It is not difficult to make distinctions in different towns and cities and to determine for each, after due consideration of special or unusual factors, the size and type of hotel which will be most likely to prove a profitable investment. The place that is primarily industrial is obviously not so good a "hotel town" as the place that is more a trading center, or a university town, or a town at a strategic crossroads of travel or in a resort locality. The commercial traveler, the tourist by rail, boat or motor, convention crowds,—these are the prospective patrons of the hotel, and it is according to their number, present and prospective, that the hotel is generally planned.

The small city hotel, being essentially a community project, is likely to be launched by representative local business men with the coöperation of the Chamber of Commerce as the need for it becomes evident. It is upon the requirements of local conditions, as presented by these men, that the architect must base his plans, though if the lessee or operator is also called in at this point, further valuable advice and knowledge are pooled. It is advisable for the small hotel to build conservatively, very little ahead of its immediate needs, unless special indications insure a very rapid growth for the town. Provision should be made for enlarging as the town or city grows. These additions were provided for in the buildings illustrated in these pages. Experience has shown that a modern fireproof hotel of less than 100 rooms is not



George Vanderbilt Hotel, Asheville, N. C.
William L. Stoddart, Architect



Charlotte Hotel, Charlotte, N. C.
William L. Stoddart, Architect

a safe economic proposition; it will not pay for itself, and such public portions as the dining room will operate at a loss, although modern coffee rooms assist greatly in reducing losses on dining rooms.

As governing the location of the hotel in the small city, the chief consideration should be given to the choice of the site, and its cost should not cause the rejection of the most desirable plot. Any experienced hotel man will agree that location is a factor of prime importance in the success of a hotel, whether it is large or small. The best site will be one located in or close to the best retail shopping district and the theaters, on at least one main car line, and preferably in the direction of the residential part of the town. The best and most far-sighted knowledge of local real estate trends should be taken into account here, in order to avoid locating in a part of the town which may become run down or unfashionable. A location close to the railroad station may not be compatible with the conditions just outlined, but in these days of taxi service, it is very doubtful if this is as important as locating in the more permanently fashionable part of the town. One reason for this importance is found in the high rentals for shops on the street floor of a hotel, as it has been found that these will pay 25 per cent of the cost of the building; or better still, they should return at least 10 per cent interest on the cost of the property, a most important consideration.

From the nature of the small city hotel project, economy is the keynote where economy can be effected without too much loss of efficiency or effect. In laying out floor plans, for instance, it is highly



San Juan Hotel, Orlando, Fla.
William L. Stoddart, Architect



Sir Walter Hotel, Raleigh, N. C.
William L. Stoddart, Architect



Poinsett Hotel, Greenville, S. C.
William L. Stoddart, Architect

desirable to plan as many floors alike as possible. The arrangement of the floor plan will be based on the requirements in each particular instance, and these differ from those of the large metropolitan hotel. It has been found that there is not a universal demand for rooms with baths, so that it is perfectly feasible to provide a number of single rooms on each floor with only lavatory and toilet equipment. These rooms, with single beds, may be located on the courts, while larger rooms, with baths and twin beds, can be located on the street fronts, while the best rooms, arranged in suites, can occupy the corners of the buildings. Every room should have lavatory and toilet facilities, and each should have a closet of at least reasonable size.

Provision for sample display rooms will depend upon the nature of the business of the town; and as such space is only in use part of the time, it should not be given too much area. In many small hotels bedrooms are utilized for this purpose by the installation of "disappearing beds" and the arrangement of rooms en suite, while in others private dining rooms, with folding partitions, may be thrown together into one large room when occasion requires.

Because of limited local patronage it is always well to conserve space in the public portions of the hotels, as these are largely non-productive, though modern customs demand an attractive lobby, lounge and dining room, with lunch room and coffee shops as profitable adjuncts on the street level floor. The best small hotel plan, in the matter of lobby, lounge and dining room, is that which is the most flexible, because its patronage varies on occasions. An effective solution is a design which combines the dining room and lounge in such a way that the dining space may be enlarged or contracted by means of screens. This will take care of any unexpected overflow, and at the same time will prevent the dining room's, during times of normal patronage, seeming empty. With this scheme it is necessary to provide space for an easily accessible storeroom to take care of the extra dining room furniture or the temporarily removed lounge furniture, according to the needs of the day.

The inclusion of a large ball room or assembly room is a matter to be determined entirely by local conditions. If the town is located strategically as a convention center, or if it has a large Kiwanis or Rotarian body, there will be profitable use for such a room, often amply guaranteed in advance, and there can be no question but that facilities for handling large assemblies add tremendously to the prestige of any hotel as the headquarters of important gatherings. It is in this connection that the hotel in the



O. Henry Hotel, Greensboro, N. C.
William L. Stoddart, Architect

small or moderate sized town fulfills its function as a community building and becomes an essential part of American life.

The mechanical equipment of the small hotel has become largely standardized by practice, and an architect who has had any experience in this type of building knows almost to a dollar the cost of heating plant, elevator system, kitchen installations and so forth. One

point, however, finds hotel managers of divided opinion,—that of the house laundry plant. It may aid in reaching the decision to know that a laundry plant for a hotel of 200 rooms costs about \$12,000 to install, so that its inclusion in the plans may depend somewhat upon the total investment possible.

Little has been said here about the exterior appearance of the small hotel, or of such elements of architectural style as may appear in the public and semi-public parts, such as the dining rooms, lobby and lounge. A justly popular stylistic treatment is a modified version of Georgian Colonial, brick with white trim, not only because this type of building is in harmony with the average American environment, but also because it has a certain "homelike" appearance that most people like. It is a style which lends itself well to the small hotel, because it may be greatly modified by economy without too much loss of effect, or on the other hand it may be considerably elaborated. The type is readily adapted to conditions.

The architect of the hotel today, moreover, has a great advantage in the vastly improved design of lighting fixtures and moderate priced hotel furniture. The keynote of the modern hotel interior,—and in this the smaller hotels directly follow the larger,—is toward a certain kind of smart simplicity. Walls in lobbies and principal hallways are likely to be of cast travertine or textured plaster, and the whole character of the decorative scheme has become as different from that of the ornate hotels of the "Waldorf type" as these were different from the hotels of the Civil War days. Hotel standards change quickly.

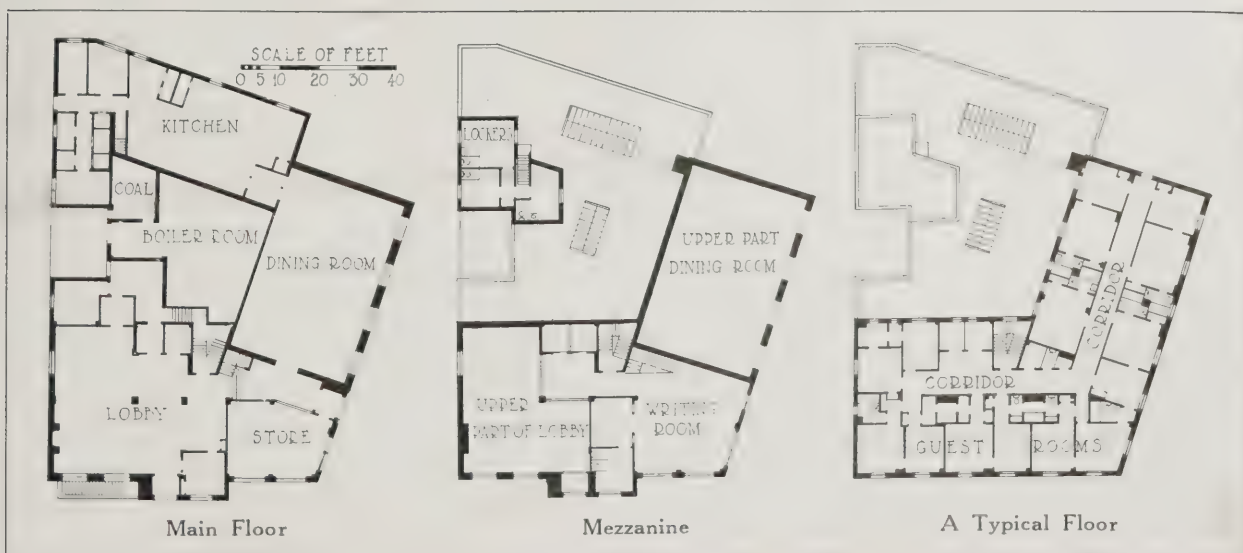
Hotel management in this country, regardless of the size of the hotel, has reached a high development of efficiency in catering to the varied demands of its public, and this efficiency has been met, and even more often advanced, by the architectural specialization that has been expended on its design. So marked indeed is the improvement in hotel design,—not only of vast hotels in large cities but even of houses in much smaller places,—that the building of a well designed hotel has been known to exert a beneficial effect upon the architecture of a town as a whole. A new and better standard for the community is thus established by the hotel or by its architecture.

IN designing a hotel for a small city or a large town, it is often necessary to build on a lot of moderate size because it is the only centrally located site available for the purpose. The cost of the building is much less when the height rather than the ground area is increased. To put a nine-story building on a plot of ground 75 by 75 costs less than it does to erect a five-story building on a plot 100 by 100. In consequence, most of the recently constructed hotels in small cities are likely to rise conspicuously and ostentatiously above the low and simple office buildings, churches and houses which surround them. Such is the case with this 96-room hotel in Bridgeton, N. J.

To keep the cost down, the building is practically devoid of all architectural ornament excepting for simple pilasters and cornice executed in limestone in the basement stories of the building, and in brick and terra cotta in the top story. The design, which is as straightforward as it is simple, is much helped by the excellent proportions



HOTEL CUMBERLAND, BRIDGETON, N. J.
DREHER & CHURCHMAN, ARCHITECTS



FORUM SPECIFICATION AND DATA SHEET—88

Hotel Cumberland, Bridgeton, N. J.; Dreher & Churchman, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Steel; reinforced concrete; concrete piles.

EXTERIOR MATERIALS:

Granite, limestone, brick, and terra cotta.

ROOF:

Slag.

WINDOWS:

Wood frames and sash; plate glass.

FLOORS:

Tile, terrazzo, maple, and cement.

HEATING:

Vapor.

PLUMBING:

Galvanized iron and brass.

ELECTRICAL EQUIPMENT:

Rigid iron conduit; elevators.

INTERIOR MILL WORK:

Brick, oak, and metal.

INTERIOR WALL FINISH:

Plaster, painted.

DECORATIVE TREATMENT:

Plaster pilasters and paneling in lobby, dining room, mezzanine and ball room.

NUMBER OF GUEST ROOMS:

94.

APPROXIMATE CUBIC FOOTAGE:

470,525.

COST PER CUBIC FOOT:

55 cents.

YEAR OF COMPLETION:

1924.

of the windows in the seven upper or bedroom stories.

Located on an irregular corner lot, an entrance from each street leads into the main lobby of the hotel. The dining room is located along one of the street sides of the building, so that it may be directly approached from the hotel entrance on this side. Arrangement has been made for only one store on the ground floor plan, unusual in these days of high taxes and high land values. The irregular-shaped plan is logically and conveniently arranged. The main lobby, the manager's office and large dining room are located on the two street sides of the structure, while space at the rear is occupied by a

large service department, boiler room and various storerooms. Two passenger elevators, centrally located, connect with the floors above. The mezzanine floor contains a writing room and a women's retiring room and lavatory. Each of the seven bedroom floors is divided into 15 bedrooms, some with individual baths and some with baths so arranged as to be accessible from each of two rooms. Practically all the baths are inside, and no outside wall space or window areas are taken up by them. The upper stories of the hotel cover much less of the lot space than the first floor, where the kitchen, service and heating departments are only one story high.



Lobby



HOTEL FRANCE, PARIS, ILL.

JOHNSON, MILLER, MILLER & YEAGER, ARCHITECTS

THIS small, 75-room hotel shows care and thought in the refined architectural details of the front elevation. The introduction of the slightly projecting center bay, which breaks the front facade into

three parts, is an excellent idea. In this case there would have been considerable improvement had the three upper stories of this bay been constructed entirely of limestone or terra cotta instead of lime-



FORUM SPECIFICATION AND DATA SHEET—89

Hotel France, Paris, Ill.; Johnson Miller, Miller & Yeager, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Reinforced concrete; skeleton construction.

EXTERIOR MATERIALS:

Mat red brick; white mortar.

ROOF:

Tar and gravel.

WINDOWS:

Wood; double-hung and casement.

FLOORS:

Terrazzo, composition and cement carpeted.

HEATING:

Steam.

PLUMBING:

Showers or tubs in practically all rooms.

INTERIOR MILL WORK:

Gum.

INTERIOR WALL FINISH:

Plaster, decorated.

DECORATIVE TREATMENT:

Public rooms, ornamental plaster; guest rooms, smooth plaster walls, decorated in oil.

NUMBER OF ROOMS:

75.

APPROXIMATE CUBIC FOOTAGE:

354,850.

COST PER CUBIC FOOT:

46 cents, without equipment.

DATE OF COMPLETION:

July, 1924.

stone and red brick. Such a treatment would have given the bay added emphasis and dignity, and would have obviated the rather thin, ladder-like effect of its six windows. The filled-in arches and the casement windows or doors, which are protected by iron railings, carry a pleasing balance on either side of the main entrance, while the detail of the colonnette and entablature of these casements is refined and interesting. A suggestion of the detail of the Adam brothers in this simple hotel facade is particularly noticeable in the iron and glass marquee over the front door and in the lights on either side.

The lobby is logically placed across the front of the first floor. To the rear are located elevators, offices, dressing rooms, etc., a small cafe called the "Italian Room," and a long, narrow dining room

opening directly into a good-sized kitchen. It seems rather strange that the kitchen, instead of the dining room, should occupy the street side of the building. The basement contains a barber shop with bathrooms connecting, beauty parlor, laundry and repair shop, in addition to boiler and coal rooms, toilets and storage space, which is used for various purposes.

Each of the three bedroom floors is cut up into 25 small bedrooms, off each of which is a small toilet room; and in connection with the eight larger bedrooms individual bathrooms are included. The lavatory and main stairway are centrally located, and a rear stairway affords an additional means of escape in case of fire. On the whole, the plan is well arranged for a small hotel, where the number rather than the sizes of the rooms is the important factor.



Detail of Lobby



Detail of Entrance



Photo. Courtesy of American Hotels Corp.

HOTEL ELLIOTT, SUFFOLK, VA.
PEEBLES & FERGUSON, ARCHITECTS



ANOTHER modern fire-proof hotel of the type which is bringing joy to the heart of the tourist has just been opened in historic Suffolk, Va. Containing just 100 rooms, the Hotel Elliott, a project of the Suffolk Chamber of Commerce, cost \$500,000, subscribed by the citizens of the city. In design the hotel consists of a central building carried up to a full height of eight stories, flanked on either side by two-story wings which help to give scale and importance to the central part of the building. Part of the second floor of the

FORUM SPECIFICATION AND DATA SHEET—90

Hotel Elliott, Suffolk, Va.; Peebles & Ferguson, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Fireproof; concrete frame.

EXTERIOR MATERIALS:

Brick, stone and terra cotta.

ROOF:

Composition.

WINDOWS:

Wood frames and sash.

FLOORS:

Cement, tile, and marble.

HEATING:

Vacuum steam.

PLUMBING:

Galvanized iron pipe.

INTERIOR MILL WORK:

Pine, painted white.

INTERIOR WALL FINISH:

Plaster.

DECORATIVE TREATMENT:

Public rooms, decorated in oil paint; guest rooms, papered.

NUMBER OF ROOMS:

Guest rooms, 100.

APPROXIMATE CUBIC FOOTAGE:

600,000.

COST PER CUBIC FOOT:

50 cents.

DATE OF COMPLETION:

August, 1925.

low flanking wings of the building is given up to open porches, a very desirable feature in a hotel located in a perpetually mild climate. In plan the main floor shows the main entrance, a coffee shop and three good-sized stores on the principal street front, and a secondary entrance, barber shop and dining room located on the minor or side street.

The main lobby, with office, passenger elevator and main stairway, is located at the center of the first floor, directly back of which is a large kitchen with service hall, stairway, elevator and entrance. On the mezzanine or second floor are located the women's parlor and writing room, banquet and ball room, private dining rooms and card rooms. The banquet room, directly above the dining room, connects with the large open porch on this side of the building. The room is decorated in the Colonial style, with wood wainscoting and trim, and is painted in tones of old ivory. It is of such size and shape that it may be used either as a ball room or as a convention hall. Had a greater ceiling height been possible for this room, a much more effective and architectural interior and better ventilation would have been secured.

The six bedroom floors of the hotel are practically identical in plan, each containing 16 bedrooms, with individual baths. All the bedrooms have outside windows and are so arranged that they may be taken singly or in suites. The walls of these rooms are covered with wallpapers copied from old Colonial designs. Carpets of interesting color and design entirely cover the floors of the rooms. At the rear of the second story is a large linen room and a service pantry to be used in connection with the banquet room. The end of the clothes chute, through which all soiled linen can be dropped from the floors above, is in the linen room. Adequate shelf spaces for the storage of reserve linen, as well as sewing machines for repair work are included in this room. In the basement is the mechanical plant of the building, which consists of the refrigerating apparatus, steam plant for both heating and cooking, the electrical switchboard, general hotel storeroom, and a storage space for each of the shops located at the front of the street floor. Lockers and toilet rooms for employees are also in the basement. The hotel has been planned and constructed to provide for enlargement.



Dining Room



Mezzanine

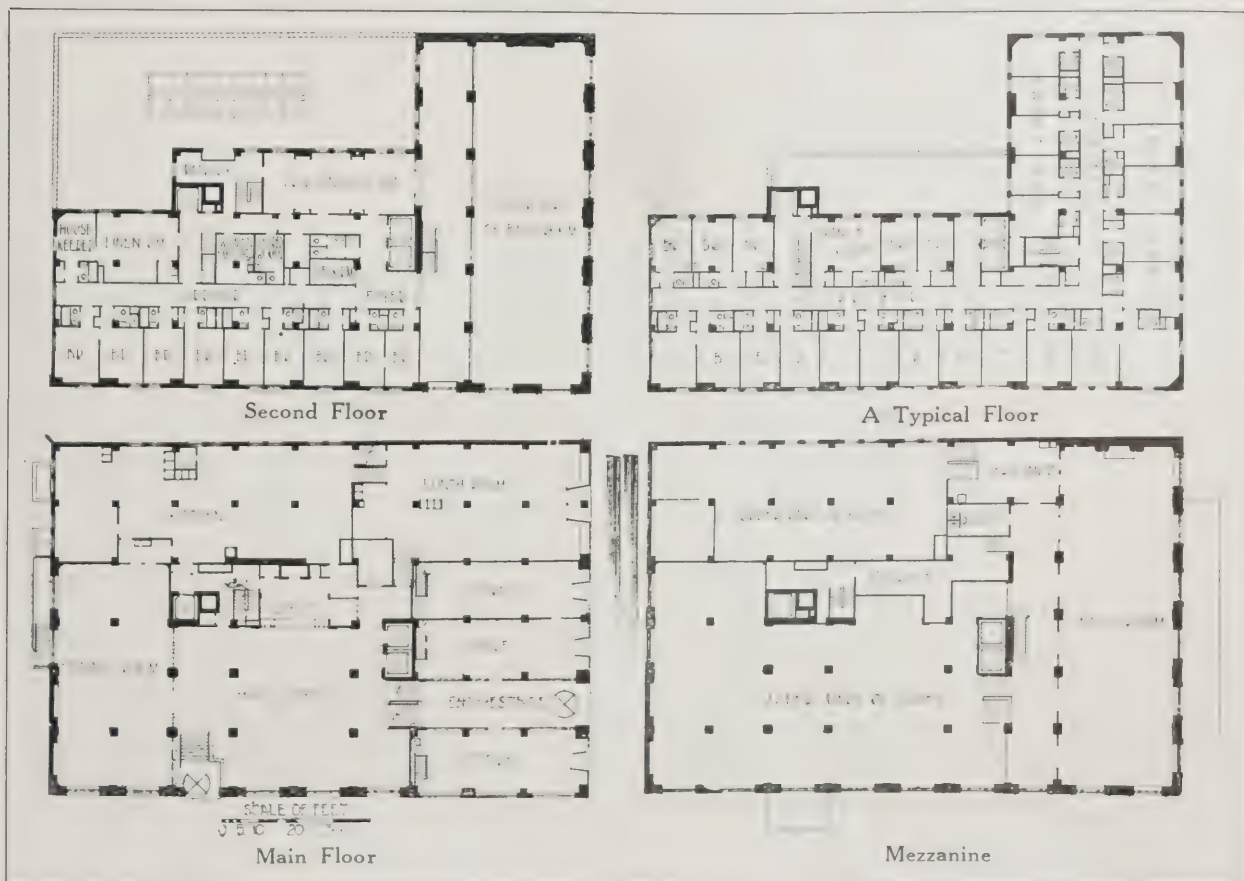
THE Yorktowne Hotel is by no means a small house, containing as it does 220 rooms, yet in comparison with the metropolitan type of hotels it can justifiably be included in this group. The simple design of the exterior facade is executed in red brick with terra cotta architectural ornamentation designed in an adaptation of simple Renaissance motifs tastefully and effectively used.

Located at the corner of two principal thoroughfares, the lower part of the building shows a distinguished architectural treatment. The front, on East Market Street, which contains three stores, a lunch room and the principal entrance, suggests in its design a two-story pavilion. The basement wall of this pavilion is broken up into large, open shop fronts with piers between, above which six tall arched windows with individual balustrades give a monumental effect to this part of the facade. Above the arched windows, which are connected by a string course, is a high entablature with a decorated frieze, which turns the corner and follows along the South Duke Street facade. The arrangement of arched windows also turns the corner of this street, but



Photo. Courtesy of American Hotels Corp.

YORKTOWNE HOTEL, YORK, PA.
WILLIAM L. STODDART, ARCHITECT



FORUM SPECIFICATION AND DATA SHEET—91
Yorktowne Hotel, York, Pa.; William C. Stoddart, Architect

GENERAL SPECIFICATIONS

GENERAL CONSTRUCTION:

Reinforced concrete; structural steel girders.

EXTERIOR MATERIALS:

Brick and terra cotta.

ROOF:

Plastic slate roofing and flashing.

WINDOWS:

Double-hung, wood windows.

FLOORS:

Main lobby, terrazzo; dining room, wood and cement; ballroom, wood; guest rooms and corridors, cement carpeted.

HEATING:

Vacuum heating system, vacuum pumps.
 Street steam supply and exhaust ventilation.

PLUMBING:

Bath or shower for every room.

ELECTRICAL EQUIPMENT:

Complete light and power system.

INTERIOR MILL WORK:

Gum wood finished a walnut color.

INTERIOR WALL FINISH:

Plaster, painted.

DECORATIVE TREATMENT:

Main lobby and dining room, imitation Caen stone. Guest rooms, papered.

NUMBER OF ROOMS:

220.

continues only a short distance, just far enough in fact to permit the introduction of three large windows. The treatment of the rest of the South Duke Street facade is quite different on the lower stories from the monumental pavilion design used across the entire East Market Street front. The necessity of locating a large main lobby only a few steps above the street level on this side of the building prevents the more logical architectural treatment of continuing the basement shops and tall arched windows all across the minor front, as on the principal street.

The eight remaining stories of coupled and single window openings are so broken up by terra cotta string courses, window trim, wall panels and heavy roof cornice that a feeling of variety rather than monotony is secured. The single windows, wide wall areas and brick quoins give strength to the corners of the building, in regard to which it can only be regretted it was not possible to locate the single windows on the centers of the large arched windows of the main or first story, to add to the symmetry of the building.

These arched windows excellently indicate the grand ballroom, which extends across the entire East Market Street front of this floor. As stores and lunch room are located below this ballroom, its floor is some 6 feet above the floor of the main lobby, necessitating a short flight of steps down to the lobby. The street floor also contains a large dining room with serving pantry and a

large, well equipped kitchen at the rear. Secondary stairways, the hotel office, passenger and service elevators and checking rooms are also included on this floor. A mezzanine floor containing private dining rooms, women's retiring room, serving pantries, men's and women's toilet rooms and entrance to the ballroom balcony is located above the main lobby, and takes up the difference in level between the ceiling of the lobby and that of the ballroom.

The bedroom floors are practically all alike in plan, each containing 36 bedrooms. Each of the bedrooms has an individual bathroom, some equipped with bath tubs and others with showers. As is usual in modern hotel planning, the bathrooms are located on the inner sides of the rooms, opening off small entries. Some rooms are arranged with beds which disappear into closets, making the rooms available for use either as bedrooms or as sample exhibition rooms.



Dining Room



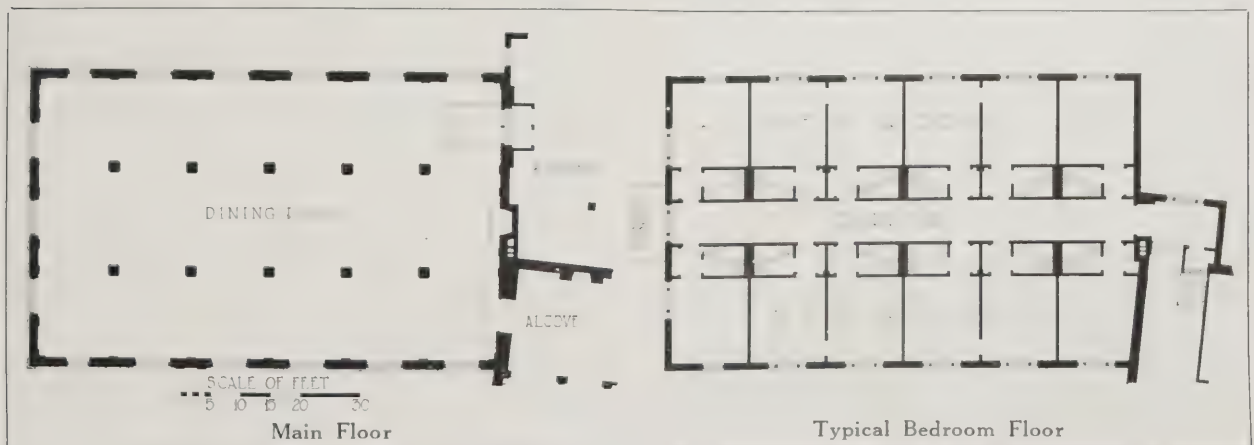
ADDITION TO THE HANOVER INN, HANOVER, N. H.

LARSON & WELLS, ARCHITECTS

THE growth of Dartmouth College rendered the size of the old Hanover Inn, which was built about 1870, quite inadequate to take care of the large crowds frequently drawn to Hanover for college games and commencements. It was quite a problem to decide just what type of addition should be built to the old hotel, which could not claim any definite stylistic classification. It was an old brick building with a mansard roof, characteristic of the period in which the original inn was built. It seemed wise, therefore, to ignore the architecture, or rather the lack of architecture, of the old structure and to design the new wing in a straightforward, simple adaptation of Colonial architecture, which has been so success-

fully used by Larson & Wells in a number of the recent buildings of different types at Dartmouth.

The exterior shows a five-story building, the top floor of which is under a sloping hip roof and lighted by a series of dormer windows. The first story is given considerable dignity and prominence by the use of wooden pilasters, entablature and large arched windows having small panes. Above these window openings are triple and single windows equipped with blinds. The scale of the large, arched windows of the first story might have been improved had their division into small panes been slightly less marked. The white painted trim and window frames, string courses and cornice contrast pleasantly with the red



FORUM SPECIFICATION AND DATA SHEET—92

Addition to Hanover Inn, Hanover, N. H.; Larson & Wells, Architects

GENERAL SPECIFICATIONS**GENERAL CONSTRUCTION:**

Steel and concrete interior frame; tile partitions.

EXTERIOR MATERIALS:

Brick; stone and wood trim.

ROOF:

Slate.

WINDOWS:

Wood, double-hung.

FLOORS:

First floor, linoleum, guest room floors, granolithic carpeted; service floor and halls, composition.

HEATING:

Vapor; steam from central plant.

PLUMBING:

Brass piping; vitreous and enameled iron fixtures.

ELECTRICAL TREATMENT:

Lighting and bells; telephone; power.

INTERIOR MILL WORK:

Whitewood.

INTERIOR WALL FINISH:

Plaster.

NUMBER OF ROOMS:

48 guest rooms.

APPROXIMATE CUBIC FOOTAGE:

271,000.

COST PER CUBIC FOOT:

53½ cents.

YEAR OF COMPLETION:

1924.

brick and green blinds, which, taken together, give the desired Colonial effect to the building. The strong similarity between the porch and cornice details of the original building and those of the new help to tie together these two structures.

In plan, the new wing has a large dining room occupying the entire first floor. This room connects directly with the main kitchen in the older and original part of the inn. The four floors of bedrooms are identical in plan, containing six bedrooms

located on each side of a long central corridor. Each bedroom has an individual bath. Access to these new floors of bedrooms is had through a connecting stair hall built at the rear corner of the original building. The illustration of the dining room shows that much care has been exercised in the refinement and scale of its Colonial trim, which reminds one of the late Colonial detail found in some of the houses in Maine built even as late as the first decade of the nineteenth century, trim of refinement and delicacy.



Detail, Dining Room



Detail, Facade



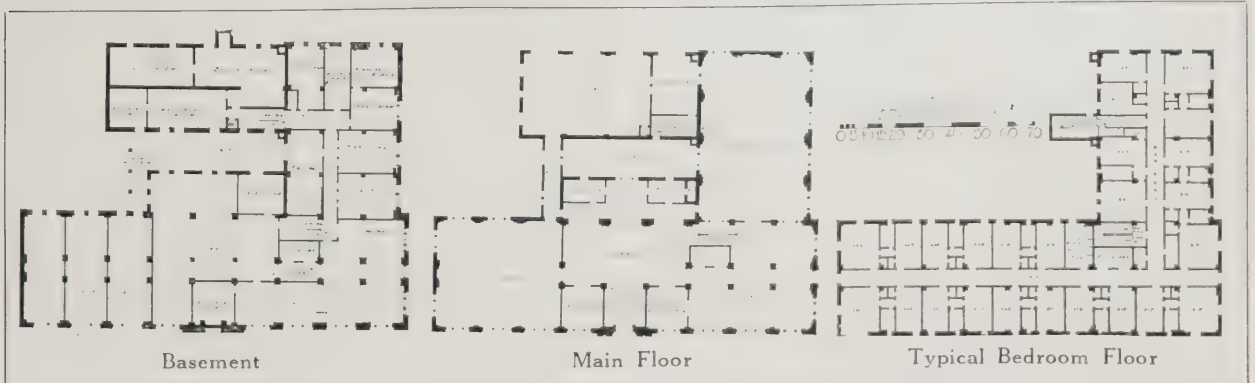
Photo, Courtesy of American Hotels Corp.

GEORGE WASHINGTON HOTEL, WINCHESTER, VA.
CLARENCE L. HARDING, ARCHITECT

THAT the building of good small hotels is not restricted to New York, Pennsylvania and New England is clearly evidenced by a glance through the pages presenting these eight small hotels. Here is a small city of Virginia, hardly known to New Yorkers, which possesses an excellently planned, comfortable and commodious small hotel containing 102 bedrooms and well appointed public rooms.

The rather monumental entrance on Piccadilly Street and the severely dignified side entrance on Market Street are both indicative of the care taken to give to the detail of the building a genuine Colonial character. The important rooms of the first, or main, floor are successfully indicated by large triple

windows which would have been more pleasing to the eye and in better scale had the heavy transom bar, which cuts the windows in two horizontally, been omitted. The width of these windows required unusually heavy lintel stones. A more pleasing effect might have been obtained had these lintels been made a continuous stone course, which would have added to the apparent height and importance of the entablature marking the top of the first story. The windows of the top floor are the same width as those immediately below, but slightly lower in height, forming a sort of frieze above the top string course. Small panes in all the window openings further add to the attractiveness of the design. Careful placing



FORUM SPECIFICATION AND DATA SHEET—93

George Washington Hotel, Winchester, Va.; Clarence L. Harding, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Reinforced concrete frame and floors; brick enclosing walls; partitions of gypsum tile.

EXTERIOR MATERIALS:

Walls of sand-faced brick; Indiana limestone trim; terra cotta ornaments and belt courses; galvanized iron cornice.

ROOF:

Reinforced concrete slab with felt and slag-finished roof.

WINDOWS:

Double-hung; wood sash and frames, except in kitchen and service portion, where metal factory sash are used.

FLOORS:

Concrete floors carpeted in bedrooms; oak floors in dining rooms; marble floors in lobby and lounge; rubber floors in bedroom corridors and Coffee Room; tile floors in all bathrooms.

HEATING:

Vacuum system.

PLUMBING:

Modern open plumbing; bath tubs built in;

syphon jet water closets with flush valves; enameled iron lavatories; pedestal urinals.

ELECTRICAL EQUIPMENT:

Two electric passenger elevators; motors for pumps and incandescent lighting.

INTERIOR MILL WORK:

White painted gum wood and mahogany stained birch.

INTERIOR WALL FINISH:

Hard plaster throughout, with smooth finish.

DECORATIVE TREATMENT:

Public rooms: walls painted in tints to harmonize with draperies. Guest rooms, papered throughout. Corridors and bathrooms, painted.

NUMBER OF ROOMS:

102 guest rooms.

APPROXIMATE CUBIC FOOTAGE:

666,487.

COST PER CUBIC FOOT:

53 cents.

DATE OF COMPLETION:

June 15, 1924.

of the windows, those of the bathrooms as well as of the bedrooms, adds much to the architectural balance and dignity of the exterior of the building.

The well balanced first floor plan shows two entrances, one through the large vestibule in the lobby, while another, leading from Market Street, is reached by a broad flight of granite steps leading directly into the entrance lounge, off which opens the large dining room. On one side of the front vestibule is a writing room and on the other a women's recep-

tion room. The so-called "Gold Room" occupies one entire end of this hotel. A spacious serving pantry joins the kitchen and dining room, and has a small service stairway adjacent. In order to obtain cross draft as well as to light the cloak room, clerk's room and manager's office, a good sized court is located at the center of the building. The four bedroom floors show little variation in style or arrangement. Each of the 27 rooms on each of these bedroom floors is provided with a built-in wash basin.



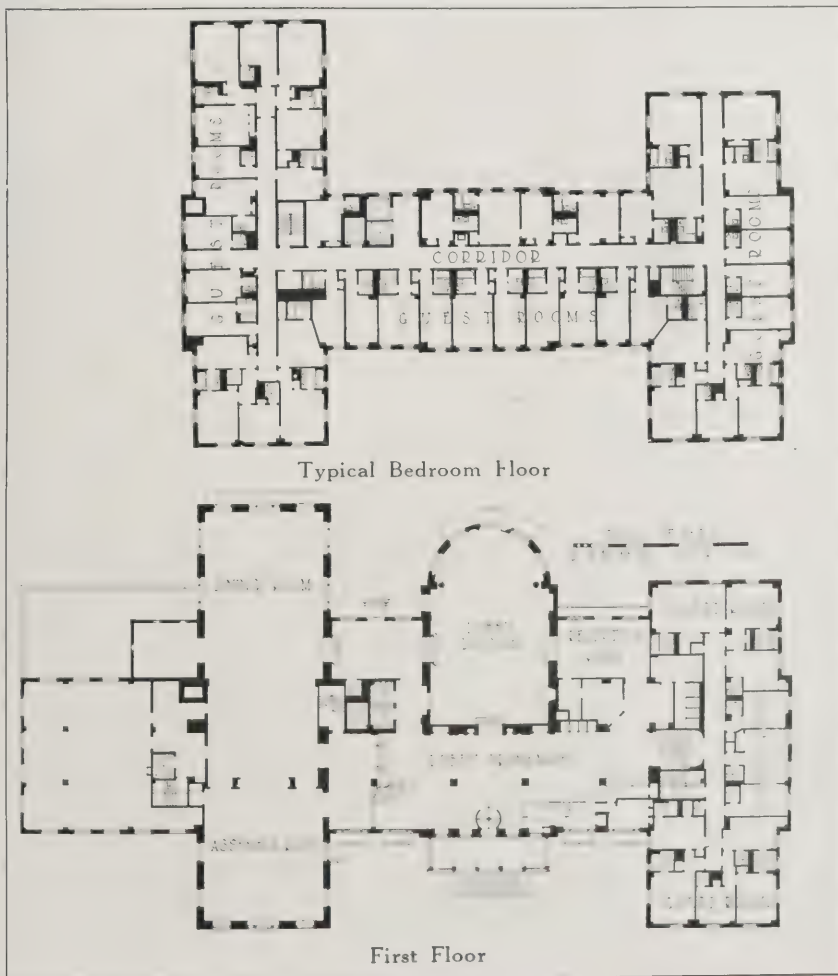
Coffee Shop



Detail of Lobby



VAN CURLER HOTEL, SCHENECTADY, N. Y.
H. L. STEVENS & CO., ARCHITECTS



SCHENECTADY can boast of having one of the best planned 200-room hotels in the country. Unfortunately, the exterior design fails to possess the excellence readily granted to the plan. An unfortunate and disconcerting restlessness has been caused by the numerous small spots of white trim scattered over the entire facade. Stone, button-like discs or rosettes, oblong detached panels, broad belt courses, in which brick and stone panels alternate, all contribute to that feeling. The high stone basement, in which stores are placed in either wing, has a simple dignity which could well have been emulated in the rest of the design for the building.

The high entrance portico or living porch, which forms the entrance to the hotel, gives a hospitable note to the design which is both appropriate and pleasing. The details of this porch, however, possess the same quality of thinness found in the other exterior details. In the top story of the main building four brick pilasters

FORUM SPECIFICATION AND DATA SHEET—94

Van Curler Hotel, Schenectady, N. Y.; H. L. Stevens & Co., Architects

GENERAL SPECIFICATIONS

GENERAL CONSTRUCTION:

Reinforced concrete; brick curtain wall, backed with tile, and tile floors.

EXTERIOR MATERIALS:

Brick and stone; wood entrance features.

ROOF:

Slate.

WINDOWS:

Wood.

FLOORS:

Cement, carpeted; public space, terrazzo.

HEATING:

Steam heat.

PLUMBING:

Standard fixtures.

INTERIOR WALL FINISH:

Guest rooms, plaster and wallpaper. Public space, canvased plaster, walls painted and glazed.

DECORATIVE TREATMENT:

Public rooms: Colonial treatment; private dining room, scenic papers. Guest rooms: Colonial papers.

APPROXIMATE CUBIC FOOTAGE:

1,129,000.

COST PER CUBIC FOOT:

66.1 cents.

NUMBER OF ROOMS:

200.

DATE OF COMPLETION:

March, 1925.

separate white-filled, arched-topped windows. The white caps, bases and small brackets of these slightly projecting pilasters, together with the several horizontal stone panels above the windows of this top story and the alternating brick and stone panels which form a sort of base course for it, all help to produce the restless, disturbed effect of the exterior details of the building. The first story above the basement shows Palladian windows, large arched-topped windows and rectangular windows, causing confusion in the design which could have been avoided.

Having frankly criticized the exterior architectural appearance of this hotel, it must now be admitted and definitely said that the plans have been most carefully and successfully worked out. The general arrangement of the first or main floor is convenient, spacious and appropriate for a hotel in a small city. Three main entrance doors, reached through the front porch, open directly into a large lobby which, in this case, is called the "promenade" or "exchange." The latter term is often applied in English hotels to the principal assembly or meeting room. Adequate and well lighted space is arranged for the hotel desk and manager's office. Stairs at either end lead down to the basement as well as up to

the floors above, stairways which are well placed.

Owing to the fall in grade, in order to place the basement floor shops on the sidewalk level it was necessary to raise the first floor several feet. It was, therefore, wisely decided to place bedrooms on the first floor of the right wing of the hotel. Several of these rooms are sufficiently large to be used for exhibition or sample purposes. Directly opposite the main entrance of the hotel four steps lead down into the large lounge with a semi-circular bay at one end. A reception room and a private dining room are located at the right and left of this room. The passenger elevators are easily accessible from both this lounge and the main lobby. The first floor of the large wing of the hotel is occupied by a large oblong dining room and an assembly room, which, by the use of folding doors, may be either joined to or shut off from the dining room. A large service pantry separates the dining room from a spacious, well lighted and adequately ventilated kitchen. The five bedroom floors are similarly and successfully planned. Every bedroom in the entire hotel has an individual bath or toilet room. The sixth floor, which does not extend over the wings, contains some of the pleasantest of the bedrooms.



Lobby Promenade



Lobby Lounge



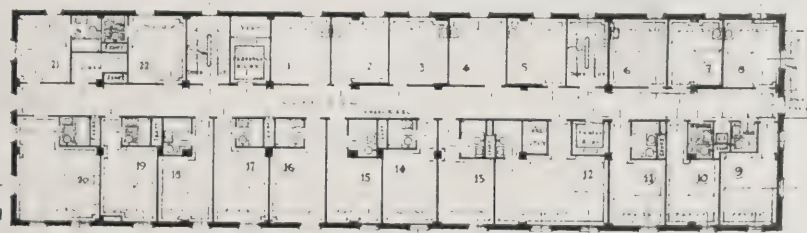
HOTEL GREYSTONE, BEDFORD, IND.
NICOL, SCHOLER & HOFFMAN, ARCHITECTS

IN the very heart of the limestone country, it is not surprising to find this small hotel built entirely of native stone. Such dignity and solidity are obtained from the use of limestone, marble or granite

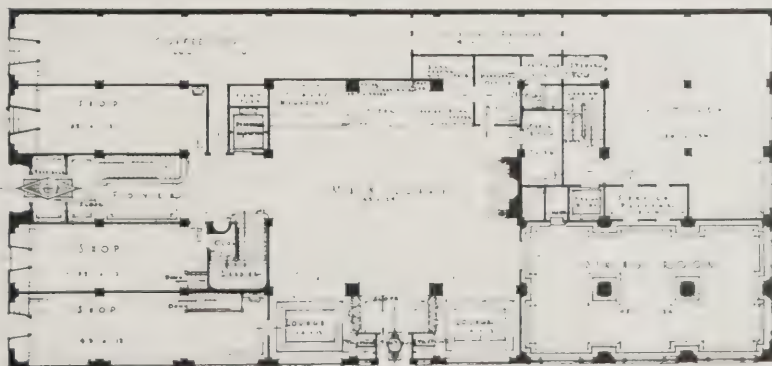
for exterior walls that it is a pity it generally costs too much to use these materials. Similar in design to the Hotel Elliott at Suffolk, Va. (p. 117), this hotel shows two-story projecting wings extending the entire

length of the hotel on either side. Instead of porches on the second floors of the wings, a number of additional guest rooms are here included.

It is unfortunate that it was necessary to locate shops on the street front of this hotel, because the large window openings thus necessitated detract greatly from the apparent structural strength of the basement walls. However, these large shop front windows have been treated quite simply and frankly and are as inoffensive as any objectionable architectural feature can be made. The windows of the second story, as well as those of the main building above, center on these shop windows. This, of course, aids the composition of the design



A Typical Floor



First Floor

FORUM SPECIFICATION AND DATA SHEET—95

Greystone Hotel, Bedford, Ind.; Nicol, Scholer & Hoffman, Architects

GENERAL SPECIFICATIONS

GENERAL CONSTRUCTION:

Fireproof; reinforced concrete frame.

EXTERIOR MATERIALS:

Bedford stone.

ROOF:

Reinforced concrete; tar and gravel roofing.

WINDOWS:

Double-hung; white pine, plate glass.

FLOORS:

Marble and terrazzo in public spaces; white maple in ball room; carpet on cement elsewhere.

HEATING:

Vacuum steam; low pressure.

PLUMBING:

Overhead loop in attic; tank above; built-in tubs.

INTERIOR MILL WORK:

Figured red gum, walnut finish.

INTERIOR WALL FINISH:

Smooth plaster, painted in oil; flat finish.

DECORATIVE TREATMENT:

Public rooms, painted.

Guest rooms; flat oil paint.

NUMBER OF ROOMS:

87.

APPROXIMATE CUBIC FOOTAGE:

510,300.

COST PER CUBIC FOOT:

40 cents.

DATE OF COMPLETION:

July, 1923.

as a whole. A well designed balustrade crowns the cornice of the two first stories, relieving the severity of the lower part of the building. Wrought iron marquees, seemingly a necessary convenience in hotel designing, shelter the front and side entrances. Thus the well proportioned arched opening which marks the principal entrance is unpleasantly cut in two by the heavy suspended marquee or canopy.

It appears that the building laws of most cities are unreasonable and inconsistent. Would it not be safer from a structural point of view, and admittedly better from an architectural standpoint, to construct a covered porch or portico across the sidewalk? Supporting piers or columns could be located on the curbing, where they would certainly be no more of an obstruction than the very heavy, clumsy concrete electric light supports seen in the accompanying illustration. It is to be hoped that some time in the near future the use of sidewalk arcades and porticos will be legalized and that they will come into common use, as they are today in the cities and towns of Italy, Spain and Mexico, but rarely in this country.

The four bedroom stories rising above the lower two stories of the hotel are broken up by well pro-

portioned and carefully placed window openings. Simple iron balconies are used to give notes of interest and color. Very simple cartouches and mouldings relieve the plainness of the top story, which is crowned by a rather heavy, severe parapet.

The plan is direct and well balanced. The main lobby is located at the center, with entrance corridors to both the front and side streets. A coffee shop and three small stores are located on the main street front, while the principal dining room, adjacent to the side entrance, looks out on the side street. The elevator and main stairway are located at the left and right of the entrance from the main street to the lobby. Clerk's desk, manager's office, telephone booths, coat checking room, freight elevator, service pantry and a large kitchen occupy the rest of the first floor. Stairs from the main street entrance lead down to the basement, where a barber shop, billiard room, men's lavatory, boiler and coal rooms are located. The mezzanine, reached by the main stairway, contains a writing room and rest and toilet rooms for women. The interior architecture, as may be judged from the accompanying illustrations, is carried out in a dignified, carefully studied style.



Main Dining Room



Main Lobby and Desk

INTERIOR ARCHITECTURE

Entrance Hall, Hotel Gouthiere, Paris

By C. HAMILTON PRESTON

TWO of the rooms of the justly celebrated Hotel Gouthiere in Paris have already been presented in these pages,—the library and a salon, both unusual and uniquely charming. The subject of this sketch, the entrance hall, both as to design and color scheme, has all the charm and uniqueness of the other two rooms.

As has been said before, the house was built as the private domain of Gouthiere, a *ciseleur* of the time of Louis XVI. It is late Directoire merging into the Empire, the exterior severely classical in the Empire manner, the interior earlier in feeling. One enters a small vestibule with the stairway leading up on each side, panels of processional classic figures being set in the wall. Beyond this vestibule, and forming the central feature of the house with rooms leading off from right and left of it, is this entrance hall. The room possesses individuality and charm.

The proportions of it are pleasing, the design and color treatment delightful. In plan it is nearly square. On two opposite sides occur round-arched doors; on the other two sides, square-headed doors carrying up nearly to the subordinate cornice which, forming the caps of the pilasters, carries around the entire room. The strictest balance and symmetry are maintained, a true door being balanced by a false, while the breaks in this smaller cornice are even painted on where there is no break or projection. Above is a wide space resembling a magnified frieze cut into on two sides by the round-arched windows or doors, and on the other two sides filled with a most beautiful bas-relief, very classic in feeling and very free in drawing and execution, especially as regards the candelabra where they frequently occur.

Surmounting this is a cornice most unusual in



Detail, Entrance Hall, Hotel Gouthiere, Paris

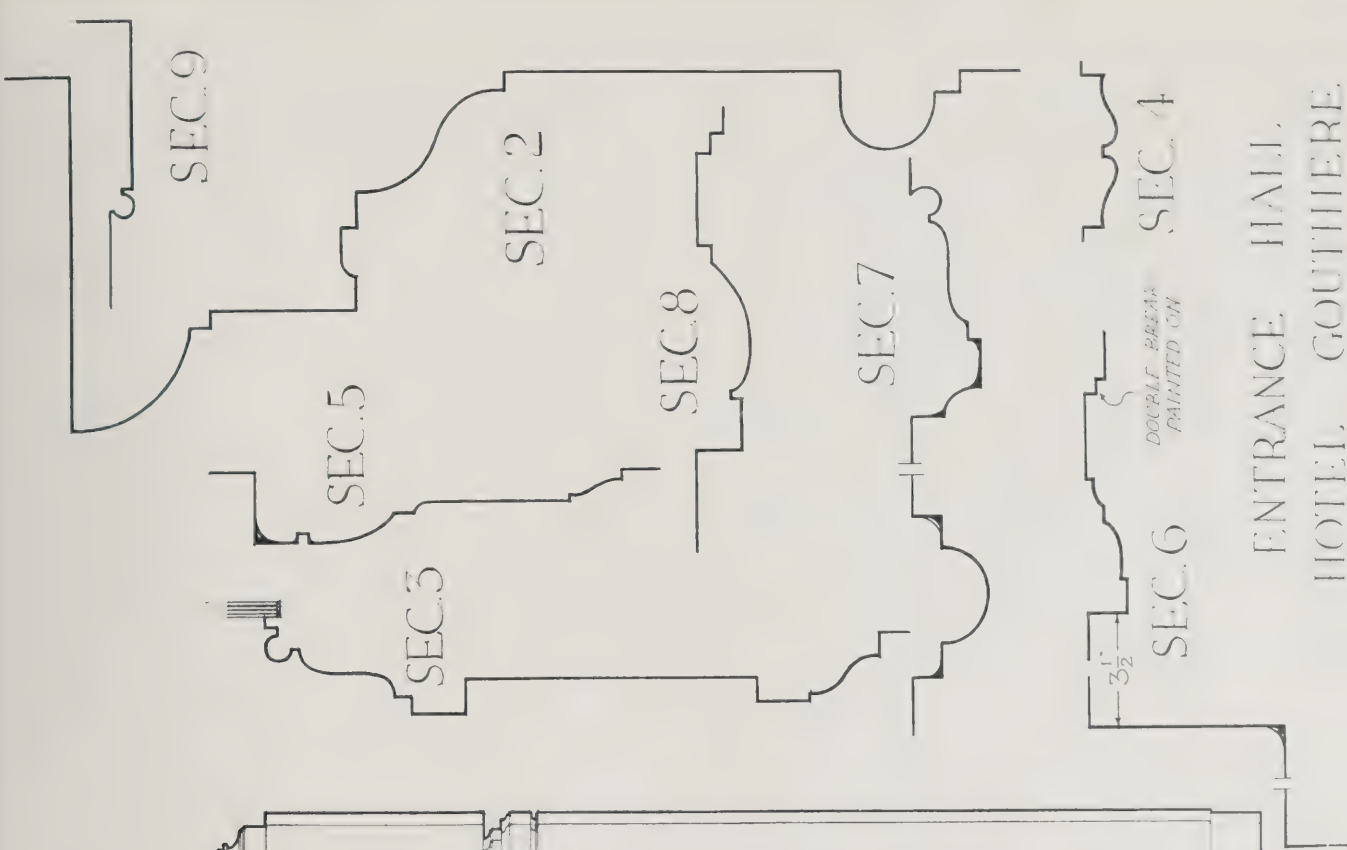
section, carrying around the room in a circle from which springs a domed ceiling of rare beauty and delicacy of form, from the center of which drops an elaborately decorated pendant. The soffits of the corners of this ceiling between circle and square are filled with a most unusual design,—an elliptical central motif framed by a very beautiful egg and dart moulding, very flat and exquisitely modeled; within the field are winged torches and tiny rosettes; on either side scrolls delicately modeled, with a tiny vine and honeysuckle ornaments filling in and rounding out the design to give symmetry.

The walls are slightly marbled and are predominately yellow in color with veinings of rose and mauve. The panels marked "painted

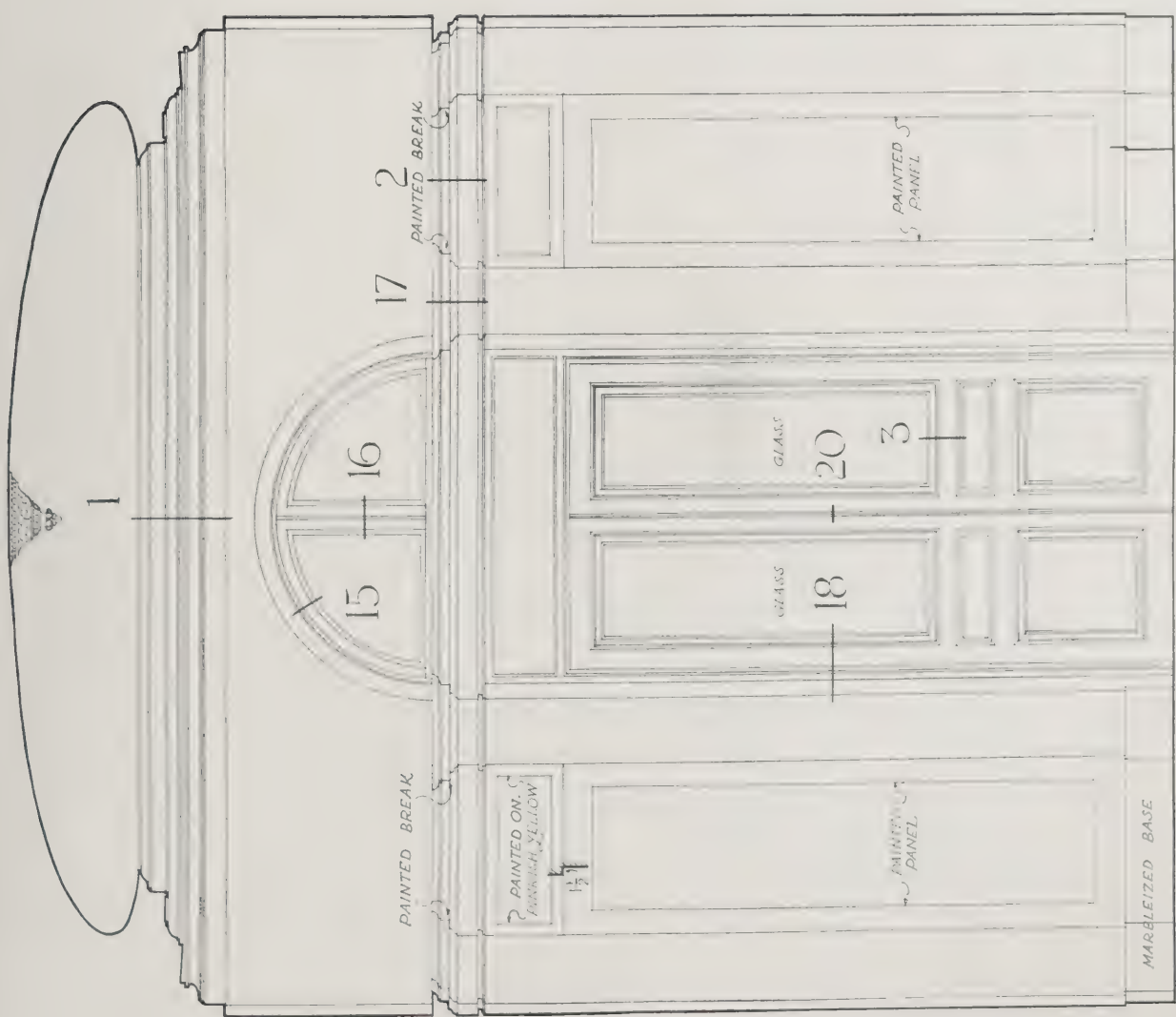
on" in the drawings are picked out in different tones from the wall and varied from it both in color and technique of marbling. All the mouldings occurring in the room are very flat and typically Empire. The marble floor, of interesting pattern, is of several different colored marbles, varying from dark to light.

For a small hall this is one of the most distinctive and original to be found in all France. To the left is a salon with interesting Empire detail over the circular windows. Beyond this is the library, of unique charm, which has already been published in this series of drawings. The doors between these two rooms are noteworthy. They are of mahogany with long central panels, octagonal in shape, in the fields of which are classic dancing figures in color. To the right of the entrance hall is the major salon of the house. This room is more typically Empire in treatment than any of the others, hence later in feeling. It is very ornate, the cornice, panels and doors being practically covered with intricate detail.

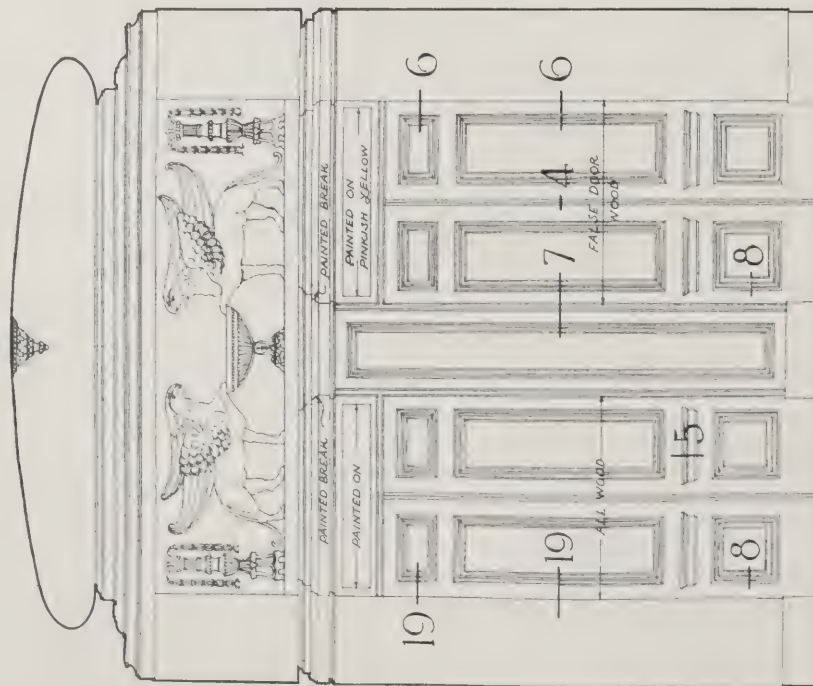




ENTRANCE HALL,
HOTEL GOUTHIERE
PARIS

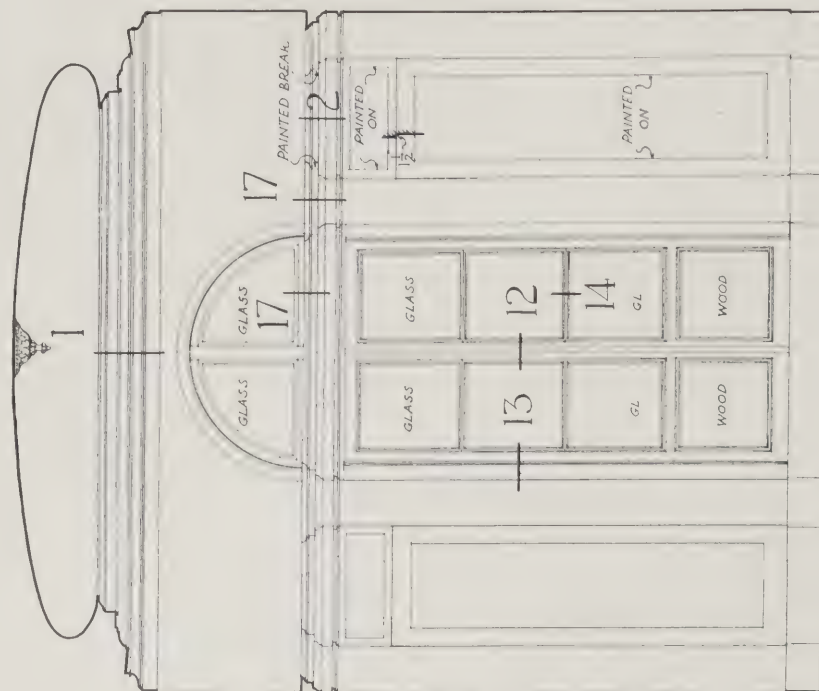


ELEVATION B~B
Scale $\frac{3}{8} = 1 \text{ Foot}$



ELEVATION C~C

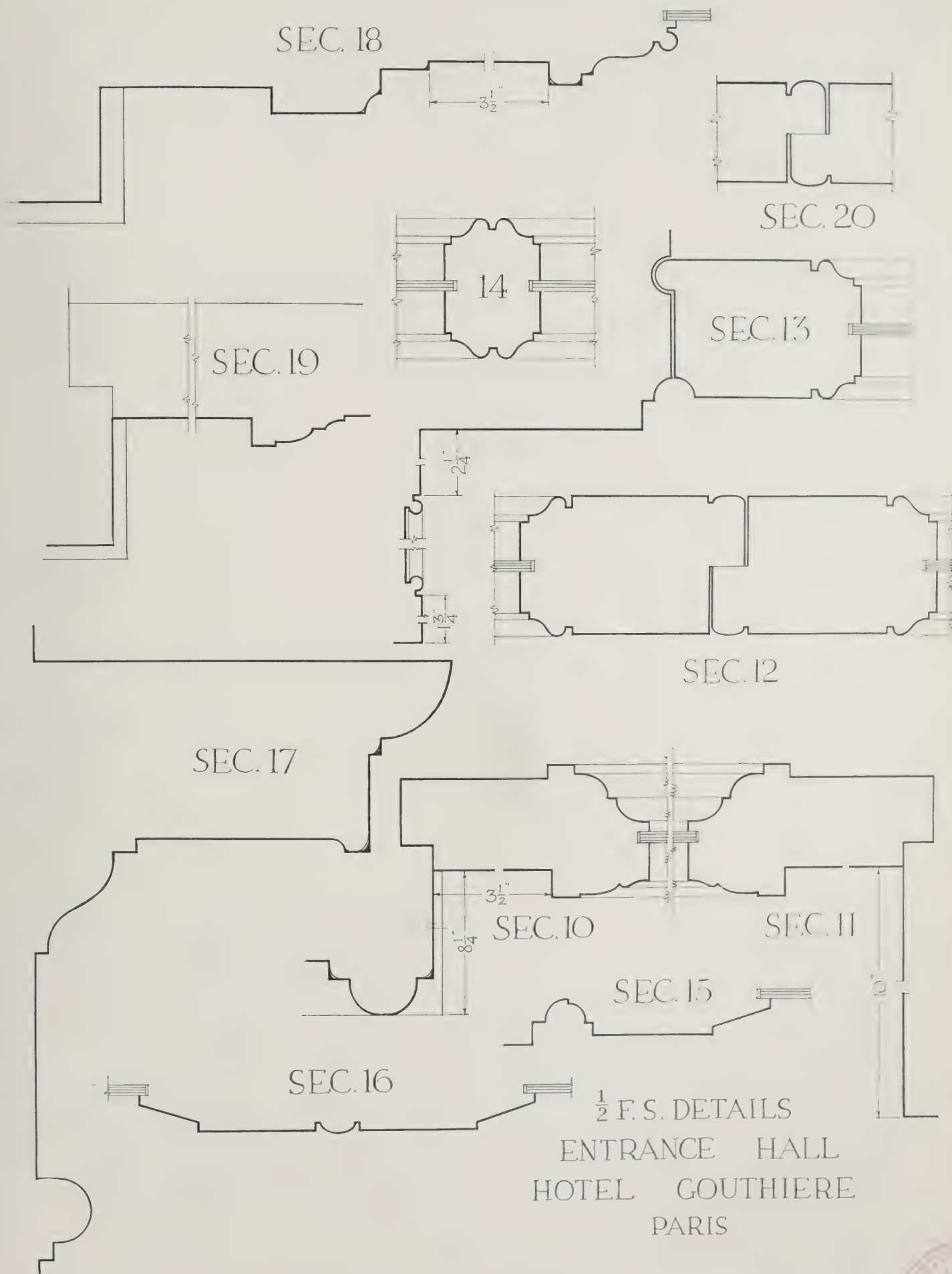
Scale $\frac{1}{4}$ " = 1 Foot

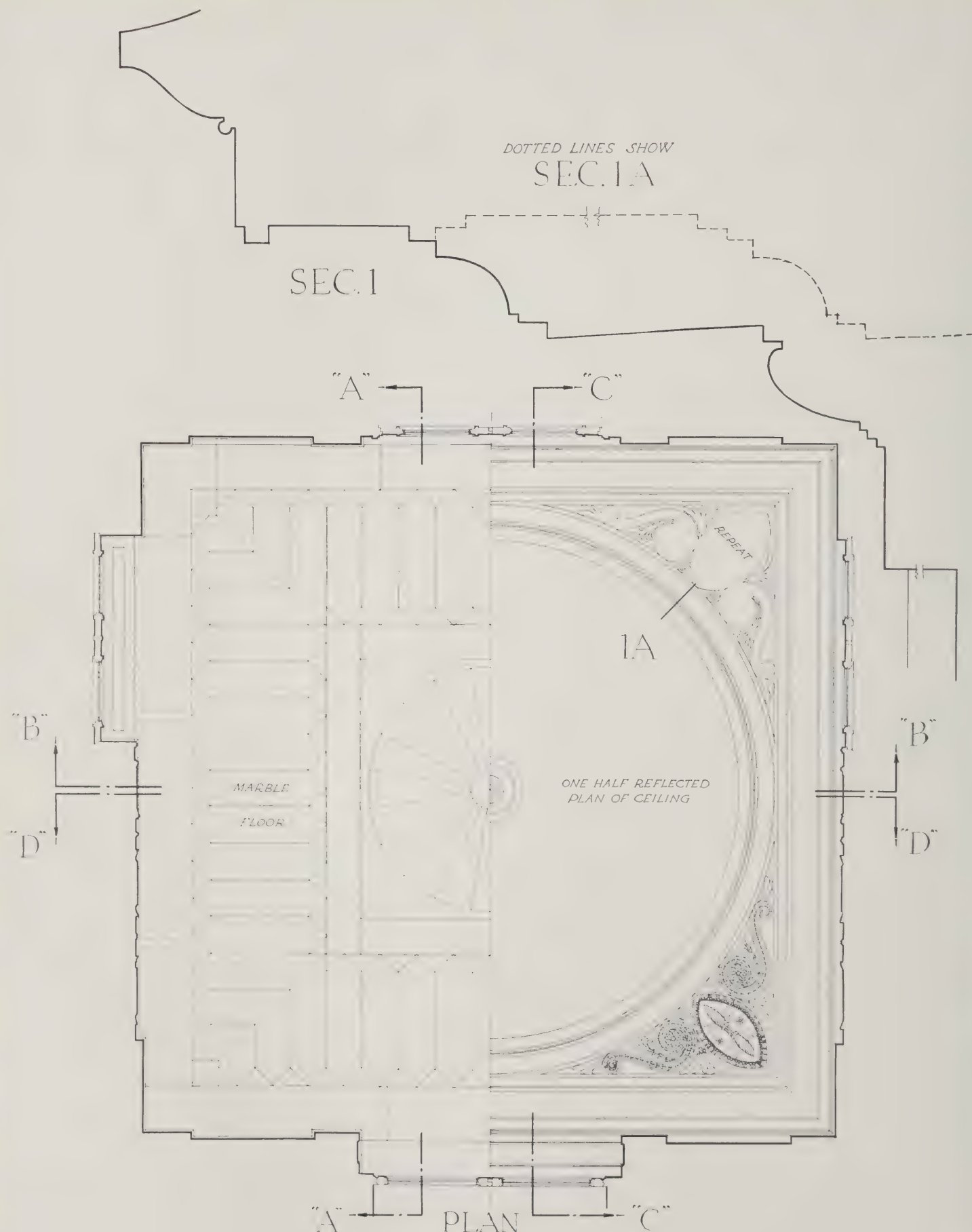


ELEVATION D~D

Scale $\frac{1}{4}$ " = 1 Foot

ENTRANCE HALL
HOTEL GOUTHIERE
PARIS





DECORATION & FURNITURE

Furniture With a Past

By ALFRED LOWDEN

WHAT is the secret of the lure of antique furniture, or of any work of art that is old? Why do we moderns desire it as the ancients desired the Fountain of Youth? It is a question both simple and hard to answer. Sentiment counts for much, though it does not supply the entire answer. There is a stimulus to the imagination about rare old things which can be appreciated only by the connoisseur, and which may be overlooked or ignored entirely by the more prosaic. To the average person, the name Louis XIV or Louis XVI is merely that of a king, whereas to the collector it immediately suggests an era of artistic development since unrivaled. Old furniture is like a secret drawer; history, dramatic episodes, intriguing affairs of the past are contained in each curve and line! Each piece is a story, a serial, more fascinating with each succeeding installment! To sit in a Venetian chair is to be magically wafted back to the grandeur of the doges. Machinery and the hurry and scurry of the modern commercial age are forgotten. We glide gently about in gondolas, with no fear of accidents from rushing taxis. We enter sumptuous halls. On all sides are the actualities one reads about in the fascinating novels of the past. Everything suggests splendor and mystery.

To understand old furniture, one must love it. To the devotee alone will it reveal its charms. Any one can buy an old piece, but the mere purchase of it does not buy its spirit, which is revealed only to those who really understand it. I do not mean to

say that the value of antiques is measured alone by their sentimental association. Their beauty of line, inspired design and comfort are all to be considered. Each tiny detail, carefully wrought by its maker, tells what pride and care were devoted to making it a perfect whole. The old artisans took great pride in their work, so that even the simplest piece possesses a distinction that no modern machine-made copy can possibly achieve, be it as elaborate as it may. One must not infer, however, that the makers of antique furniture wrought only for pictorial effect. Comfort was also thought of, and contrary to the general belief, it was attained. As an experiment, sit in a Chippendale, Hepplewhite or Louis XVI chair, and you will find physical ease as well as mental solace. Modern chairs derive their comfort from use of springs and overstuffed backs and seats. Antique furniture accomplishes the same result by a careful study of anatomy and the use of curves and lines which fit the human torso. It is replete with beauty and symmetry, character and charm. Even to touch a beautiful antique is exhilarating. To touch a fine old piece of wood, mellowed by time and polished by vanished hands, is to experience a thrill unthought of in connection with modern furniture. When looked at from a business point of view, the purchase of antique furniture means an investment which never depreciates, but increases in value yearly, as antiques become scarcer.

One absorbs the atmosphere and character of one's surroundings. With surroundings which are



A Modern Arrangement of French Furniture



A Rare Old Italian Credenza and Armchairs

beautiful and refined, one becomes cultured and able to understand the finer things of life. Much thus depends upon the type of furniture, with which we fill our homes. Furniture made by craftsmen who imparted a little of themselves to each piece, cannot but help to strengthen the susceptibilities of the eye and mind to beauty. John Quincy Adams once said that the whole trend of his life was altered by having a Chippendale chair in his possession! This may be easily understood by any lover of antiques. To gather beautiful furniture is like setting forth on a quest, beginning to travel a shining road, lined with the fruits of knowledge. It is like acquiring the key to a glorious and romantic past. Queens, kings, courtiers, and all the magnificent and colorful pageantry of a vanished age appear before the mind's eye. Possession of a few pieces of antique furniture



Miscellaneous Furniture Tastefully Grouped
Photos loaned by John H. Hutaft, Inc.

will help to make us forget the many shortcomings of most of our modern so-called creations.

Good furniture placed in a hovel would still be beautiful and distinctive.

If only our modern designers would study the history of each piece, and use the basic principles of the artists whose skill can never be surpassed, what a relief it would be! Unfortunately, few understand that real beauty in furniture design lies in simplicity. They take an Italian Renaissance chair and modernize or "adapt" it to suit their own taste and the supposed taste of the general public, with a result which is monstrous. To improve on the work of a Chippendale, Boulle, or Adam is like gilding the lily—more attractive,

possibly, to the untutored mind, but hideous to the connoisseur with trained judgment. All ages have their eras of decline in the matter of design, but it is a very simple matter to cull the good from the bad.



French Pieces Grouped in a Dining Room



A Well Balanced Grouping of French Pieces

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A CAPE COD COTTAGE

From a Water Color Sketch by Edmund S. Flanagan

The Architectural Forum

The ARCHITECTURAL FORUM

Volume XLIV

MARCH 1926

Number 3

Importance of Good Architecture in the Small House

By D. EVERETT WAID

ARCHITECTURE to many people means good building made attractive, but the definition is not wholly true. The work of a competent architect includes good planning for space saving, convenience and economy; it means selection of materials, durable and suitable in various ways; it involves safe construction. If in addition it presents to the public artistic design, it is fortunate. Too often, however, the public's is a narrow conception,—merely decoration added to a building.

The importance of good architecture in the field of small houses may be realized by bringing to mind certain sections of Philadelphia, Baltimore, and other American cities, where mile after mile of houses has been built in monotonous rows,—a score in each row exactly alike. The deadening influence upon good taste of such communities is obvious. Such houses may be physically comfortable, but they are mentally, spiritually and aesthetically paralyzing. Individuality is submerged, and education in the higher, finer things of life is made difficult. By contrast, inspection of an attractive suburb, where the streets are not all parallel, and where some thought is shown in the grouping and in the interesting variety of designs of the individual houses and in the grounds around them, makes clear to the most superficial observer the overwhelming difference in educational and cultural value. Is it not clear that monotonous rows of ugly houses are a blot upon a community as well as a liability to good citizenship?

Speculative building has, in most cases, been the cause of monotony in community developments, where promoters have thought, with a false idea of true economy, that much money could be saved by using the same set of plans for row upon row of houses. A little initial cost may be saved in this way, but looking at it even with the purely commercial eye of the speculative builder, far higher rentals and higher selling prices are secured by better architecture and by that combination of variety and consistency which it requires training to create.

One of the few benefits to architecture of the World War took the form of industrial villages in which the individual houses had necessarily to be very inexpensive, and an entire project to be carried through with considerable speed. Wherever

architects were employed to help in this emergency, admirable results were achieved, and the many well planned groups and a few villages left to testify to this should have served as an object lesson to real estate developers more widely than has been the case.

In this sort of group designing a little more than good design for the individual houses is required. The related arrangement of the houses in the group, and the aid of well studied planting will do much to prevent the monotony which seems almost inevitable when houses of approximately the same sizes and similar designs are equally spaced and equally set back along a straight street. Where group building is proposed in a new real estate subdivision, with streets yet to be laid out, it is obvious that curving roadways, presenting the houses at varying angles, will give the greatest charm and diversity. The trained vision of the architect sees such things before pencil is put to paper. Untrained eyes and unappreciative minds too often fail to see the vision, even when it is carefully put on paper.

The intelligent public should realize that it is the architect who is trained and qualified to design not simply an individual "house beautiful" but whole streets of homes so charming in themselves, and so related to one another, and with such attractive surroundings that they will be an inspiration to home life. People should realize that although only a meager compensation is possible, so that he can hardly afford to render the service, the architect eagerly seeks the privilege of designing small houses.

In all parts of the United States there are towns in which the buildings and houses are frightfully bald and often positively bad. Only kind Mother Nature, with her shielding screens of trees and shrubbery, prevents our cities from being the ugliest places on earth. When journeying across the country and passing through towns and hamlets, the view of the handiwork of man is most depressing. When will people object effectively and protest sufficiently against living in shelters which are ugly habitations and not really habitable homes? When will the general public learn that houses artistically designed, well grouped, wisely planned and safely built constitute a financial asset and a spiritual inspiration, not only to each owner but to the whole community?



Photo: George H. Van Anda

HOUSE OF YALE STEVENS, ESQ., RYE, N. Y.
H. M. WOOLSEY AND B. F. CHAPMAN, ASSOCIATE ARCHITECTS

Norman-English Influence in Country Houses

By FRANK J. FORSTER

CONSIDERING that there is a constantly growing appreciation of the English and Norman types of country houses, it is remarkable that the general conception of their design and character is so vague and often so misleading. The types certainly mean more than a mere name; and they mean, too, more than a bit of real or imitation half-timber work and a picturesque roof line.

Along the northern coast of France there is a stretch of fertile country which the Normans claimed for their own because of its beauty, its wealth of natural resources and its strategic position. This aggressive, powerful race of men fed on the bounty of the country and gradually absorbed the characteristics, customs and traditions of the neighboring peoples. So vigorous, so dominating were the Normans that their traits are expressed in their buildings, many of which are sturdily standing today,—the churches, the chateaux, and *manoirs* and the peasant farmhouses of Normandy, possessed of strong charm and definite character as regards architecture.

Naturally the Norman imprint upon architecture made itself felt in England after the Norman conquest, and in the more sincere adaptations of the English country house in America today certain Norman traits are discernible, not only in general design but in details as well. Its origins lie deep in the soil of England; they are woven through the whole fabric of English rural life, from the earliest times to the present day. In the English country house there is much that is mediæval, and this mediævalism is not

only of insular English derivation; it derives strongly and inescapably from the Norman as well, and without a clear realization of this it is impossible to make any intelligent appraisal of the English country house, whether in England or in its various adaptations in this country, constantly growing in popularity. The Norman influence is important.

The distinguishing marks of Norman and English architecture are not difficult to detect, and once the eye becomes conscious of them they are everywhere apparent. In Norman buildings the roof pitch is generally steeper than in the English; there are smaller overhanging cornices; the placing of windows and doors, in Norman architecture, has a character quite its own. The Norman is an architecture of towers, roof masses and picturesque compositions; history and feudalism are suggested in its whole spirit, which is strongly expressive of romance.

Another distinctive detail of Norman buildings is the patterned treatment of brickwork, expressed in interesting designs of friezes, quoins, belt and band courses,—with frequently an entire wall surface laid up in squares or diaper patterns. There are possible, too, many interesting blendings of brick and stone, —not affectations, or in any sense "trick architecture," but an inherently sincere expression on the part of the old Norman builders, who built only of materials from their immediate countryside, stones from the fields, the brick made of clay from nearby banks, and the slates from the quarries on the country's hillsides.

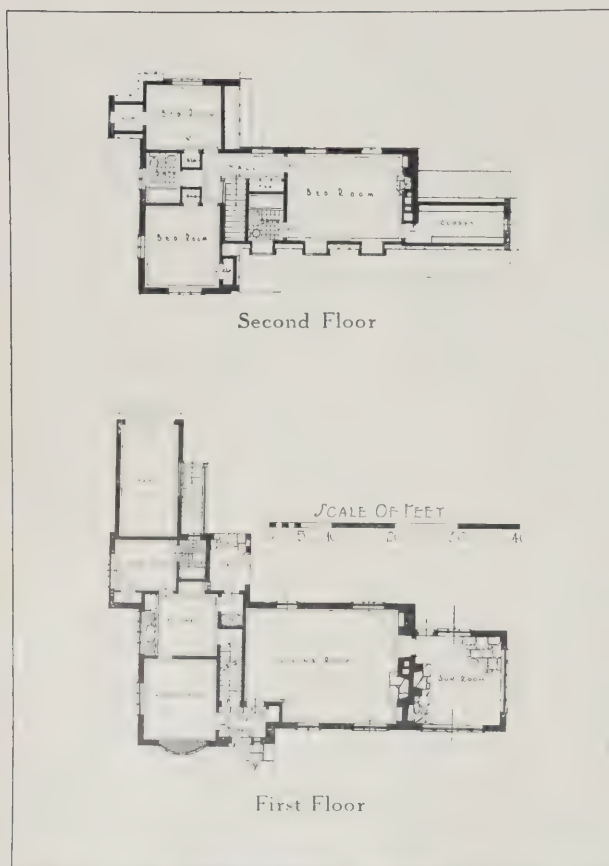
In Normandy we find broad expanses of wall



Photo. John Wallace Gillies

House of Wilbur Brundage, Esq., Douglaston, N. Y.

Frank J. Forster, Architect



surface in stone, brick or stucco, or in blends of brick and stone. Often the brick or stone surfaces are "buttered" or "parged" over with stucco, which lends an individual richness of texture and color. Almost pathetic, in comparison with these rich wall surfaces, are the usual flat and unaccented brick or stucco wall treatments in so many of our attempts at English country house adaptations. There would be a vast improvement in this type of our domestic architecture if we achieved no more than the beautiful wall surfaces of the old buildings of Normandy.

There is a wealth of picturesque detail in the minor buildings of Normandy, not to speak of the chateaux, and much of this detail found its way directly into England. There were no finer woodworkers in the middle ages than the French of Normandy, and their half-timber work, their vigorous outdoor carving, their rugged yet graceful outside stairways, galleries and entrance porches are the finest of their kind in existence. The English, with the strength and artisanship that wrought ships from their native oak, worthily perpetuated the Norman tradition, merging it into a tradition of their own that equaled the Norman in vigor even if it fell a little short of the Norman's finesse in artistry. And turning toward Normandy we would discover, in readily adaptable form, much of the fundamental architectural character that makes up the English architecture we wish to adapt. I never think of the

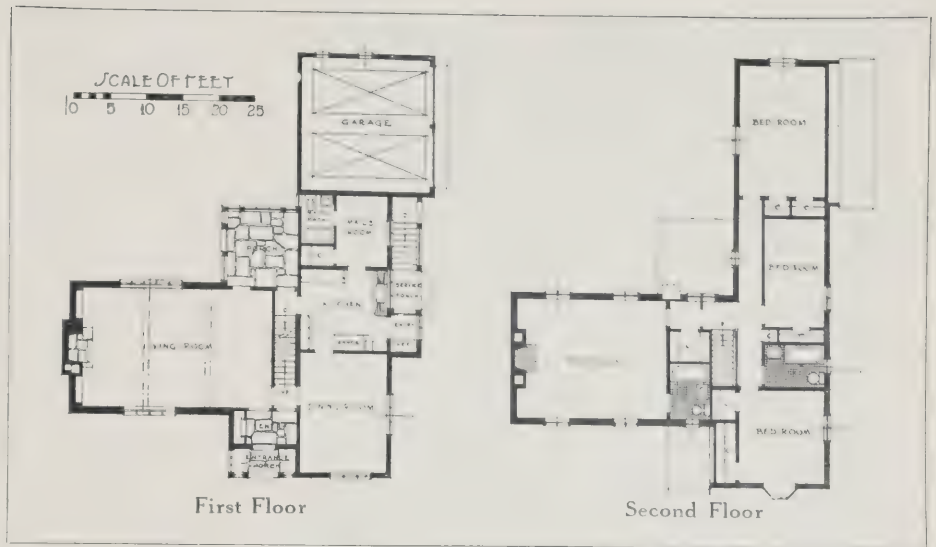


Garden Front, House of Wilbur Brundage, Esq.

Frank J. Forster, Architect

term "copy" in connection with architecture, because "copied" architecture almost invariably lacks vitality and spontaneity.

Looking at the modern version of the English country house in England, we find a type established not only by the authentic surviving examples of the earliest days, but by the kind of adaptation evolved by such eminent British architects as Lutyens, Voysey, Baillie-Scott and Dawber. These men have designed and built with a native vigor, tempered by the ideals of William Morris, which means that they have compromised very little in meeting modern living requirements in terms of the picturesque. Perhaps they have not been sufficiently concerned with meeting modern living requirements. From the American point of view the merits of the modern English country house seem sometimes to be obscured by its defects, the latter consisting mainly of impractical or inconvenient plans, and awkward room arrangements.



The merits of the modern small country house or cottage in England are apparent, and have proved peculiarly difficult to copy in this country, for several vital reasons. In the first place, the English country house is a tradition, with its roots deep in English life. Then, moreover, it is not a product of self-consciousness or an imported taste; it represents the Englishman's idea of a dwelling, and the ideas of his forefathers. It is picturesque by nature rather than by artifice, and much of this quality, much of the



Garden Front, House of Gerald M. Lauck, Esq., Upper Montclair, N. J.

Frank J. Forster, Architect



Bedroom, House of Gerald M. Lauck, Esq.

charm that has inspired a desire for its counterpart in this country came originally from the rugged, interesting local materials of which it was built. Local tiles and slates, the handiwork of the local artisan in the fashioning of timbers, in "parging" and in the whole technique of building made the modern English country house, like its ancient prototype, a thing virtually impossible to imitate with any success (until very recently) in America.

The English country house grew from its surroundings and was a part of them, as were, for instance, the stone cottages of the Cotswolds, and the houses built all of local slate in Cornwall. These houses "belong," and are good architecture for that reason, just as the houses of Chestnut Hill ledge stone around Philadelphia are good architecture, as are also the houses of local moraine stone in New York and some parts of southern New England.

The English country house or cottage type is ours by racial, if not by national heritage,—but then our only true national style is our Classic Revival of the early nineteenth century, for our "Colonial" is an English Georgian importation, localized, it is true, by the colonists, but none the less English. For many years after American architecture turned its back on the Classic Revival as being "old fashioned," through all the architectural depravity of the 1880's, American architects gave little thought to the development of adaptations of pure types. And when they finally took up the English cottage, along with



Photo. Kenneth Clark

Living Room, House of Gerald M. Lauck, Esq.

Frank J. Forster, Architect

a miscellany of other types, their versions of it were in the nature of very bad parodies. Handicapped not only by a prevailing lack of general taste, but also by the absence of any suitable materials or well instructed craftsmen, the first of the modern American adaptations of English country houses bore virtually no resemblance to the country houses of England. There was, for instance, no appreciation whatever of the natures of textures of building materials. Slate was split as thin as cardboard, surfaced smooth, and selected for uniformity of color, except when the architects' fancy called for the contrivance of patterns of red and light green slate in the darker gray expanses of mansard roofs. Brick was similarly made to meet the general demand for uniformity of color and total absence of anything like texture. The ideal brick wall, in those days, was as interesting as a piece of oilcloth. And lumber was mill-finished and not considered as possessing any natural or material qualities worth bringing out.

This matter of materials and the manner in which they are handled is especially important in any study of American versions of the English country house, because the English country house in its own country is not so much a matter of plans and elevations, or even of specific details, as it is a matter of technique. When architects realized this, they cast about for building materials that would at least approximate in character the building materials used by the ancient and modern builders of the English country



Dining Alcove, House of Frank J. Forster, Esq.



Photo. John Wallace Gillies



Details, Living Room, House of Frank J. Forster, Esq., Great Neck, N. Y.



Photo. John Wallace Gillies

House of Frank J. Forster, Esq., Great Neck, N. Y.

house,—and for a time they cast about in vain. Gradually the manufacturers sensed the demand, and it soon became possible to obtain without any difficulty bricks of every texture and color from the “tapestry” variety to the warped and burnt “clinker” bricks that used to be thrown on the scrap heap of every brickyard in the country. Then came graduated slates, as rough and rugged as the old hand-hewn slates of Cornwall, and ranging through

a fine variety of beautiful and useful natural colors.

Materials alone, however, would not build the true American counterpart of the English country house. It became apparent that the architect must educate the artisan to a point where he could appreciate and, to a greater or less extent, emulate the age-taught craftsmanship of the European artisans, versed in methods handed down from father to son from the middle ages. Perhaps Wilson Eyre was



Secondary Entrance



Main Entrance

Details, House of Frank J. Forster, Esq.



Photos. John Wallace Gillies

House of Wilbur Brundage, Esq., Douglaston, N. Y.

Frank J. Forster, Architect

the first architect in this country to get this vitally necessary element of craftsmanship and technique in the hands of the artisans who built his houses. And this essential part of the building of an English country house in America has certainly been successfully achieved by Harrie T. Lindeberg, by Mellor, Meigs & Howe, and by John Russell Pope. In my own work, when I am doing a house of this type, the technique of its actual workmanship is a matter of

the utmost concern to me, because without it the house must lack the great essential of character.

This may be the place to say a few words about the mistakes that often occur through a too great insistence on rugged craftsmanship, an insistence that leads to unfortunate exaggerations. This is often apparent in the rough-hewn timber work of an English country house adaptation, which should look, of course, as nearly as possible like the hand crafts-



Entrance, House of Wilbur Brundage, Esq.



Entrance, House of Gerald M. Lauck, Esq.

manship of the early builders. Not content with this, hand-hewn timber work today is often made to appear actually mutilated, as though it had been hacked with an axe instead of rough-hewn with an adze.

It is obviously impossible to say much of a specific nature about country house plans, partly because these vary considerably with individual clients, and partly because the American small house plan of today is so generally good. For economy of space, for efficiency in servantless housekeeping, our plans are on the whole very well studied. In the small house we usually plan for one fine big room, even if the house is so small that the dining room is sacrificed and its place taken by an attractive alcove, or if one end of the living room is used for this purpose. In formal types of houses the exterior is usually based directly on the plan; in the informal house of the English cottage type, plan and exterior are often studied together, bringing about a perfect relationship in which neither interior nor exterior sacrifices any of its charm for the other. We have achieved the picturesque, and have done it without making any compromise with our ideas of modern comfort and convenience, which are of importance.

On matters of cost it is also difficult as well as very unwise to become specific. The availability of required materials, the amount of hand craftsmanship made use of, the general character of the construction, as well as the materials employed, make it difficult to arrive at standardization. That charming gate lodge that John Russell Pope built for the Vanderbilt place on Long Island, a little building fashioned of hand-wrought oak timbers, with truly mediæval carved wood grotesques and old handmade tiles from a ruined building, probably cost as much to build as a good-sized dwelling of ordinary standard construction. It is a marvelous little building.

The Norman or English country house does not lend itself to the formulæ of standard construction. You arrive nowhere on an estimate of its cost "per cubic foot," for its construction calls for use of special materials and a considerable amount of hand craftsmanship. It is a type that lends itself either to very economical or to more expensive construction. If it is to be a simple affair, mainly of stuccoed exterior and shingle roof, with little more craftsmanship than a few adzed beams, it may be built with astonishing economy. If, on the other hand, it is to have considerable tenoned half-timber work, brick nogging, carved verge boards and metal casements, with corresponding niceties inside, its cost is increased. And even if all English or Norman country houses were of similar materials,—which they are not,—our varying local costs in America would make it no less difficult to arrive at standardization. The same house might vary considerably in cost in a New York and a Philadelphia suburb, or even in two New York suburbs, which is often the case.

Anyone who has built country houses of the English type cannot but have come to the conclusion that they are in every respect a matter of technique rather than of formula; that they have become a definite and a creditable contribution to American architecture; and that the only method by which they may be successfully achieved in this country is through the sincerity of the architect who designs and builds them, through his real appreciation of the thing he is trying to do, and the conscientiousness with which he supervises every stage of the work. Here the sympathy and understanding of the client is necessary. More of the real character of an English or Norman country house adaptation lies in the workman's tools, properly directed, than could be shown in a full-sized detail in the architect's drafting room!



House of Gerald M. Lauck, Esq., Upper Montclair, N. J.
Frank J. Forster, Architect

On the Charm and Character of the English Cottage

By JULIUS GREGORY

THE English type of house as developed in this country constitutes one of the most interesting and picturesque forms of our domestic architecture. When carried out in the spirit of the old work and placed amid a proper setting, no other type of architecture can equal it in its quality of charm and what we may call "livableness." It is not only simple and practical, but in the rugged strength of its structure there is a softness of line, simplicity of mass and interest of texture hardly equaled by those of any other type. The old cottage in England,

usually a little farmhouse, low lying, and with a background of trees, a well kept garden and flag walks, is the prototype of our English cottage. Sometimes of plaster and timber with old slates or flat tiles for the roof, quaint brick chimneys and casement windows, often of stone, it always pleases with its inviting, intimate, appealing, and homelike quality.

There are many varieties of old English houses, due to limitations in use of local building materials. Where there was abundant wood, half-timber and plaster were used. Where there was stone, the stone



Photo. Sigurd Fischer

House of Miss Cora A. Week, Riverdale, N. Y.

Julius Gregory, Architect



Detail, Entrance Front,
House of Mrs. Mary McKelvey

house with slate roofs was built. In some parts of the country there are old plastered houses with thatched roofs, and in other places are houses of brick. Throughout the European countries the same conditions prevailed with a striking similarity of expression, the variation being mainly in the different pitches of the roofs. Underlying them all is the same quality of repose, accidental variety of detail, and invariably beautiful textures of exposed materials. Except in the houses with a preponderance of timber work, there was seldom a studied effort for effect.

The old houses were built to endure, were structurally sound, and were wrought by the hands and souls of craftsmen whose traditions had been carried down from family to family, and whose pride of workmanship and understanding of building materials were parts of their lives. Time, with the growth of foliage and trees, has done much to give that quality of charm which we admire about the old houses; but without the fundamental honesty of structure in them there would not be much to enthuse over. The satisfying feeling of texture predominates, and affects our senses. It is pleasant to ponder over the old wall surfaces of stone, brick or plaster, the hewn timbers and the roofs of slate and of tile, and to realize that it is the beauty of surface that arouses our enthusiasm. Texture, the elusive quality of a surface which makes it pleasing to the eye, permeates our picture of the old work. And it pleases because



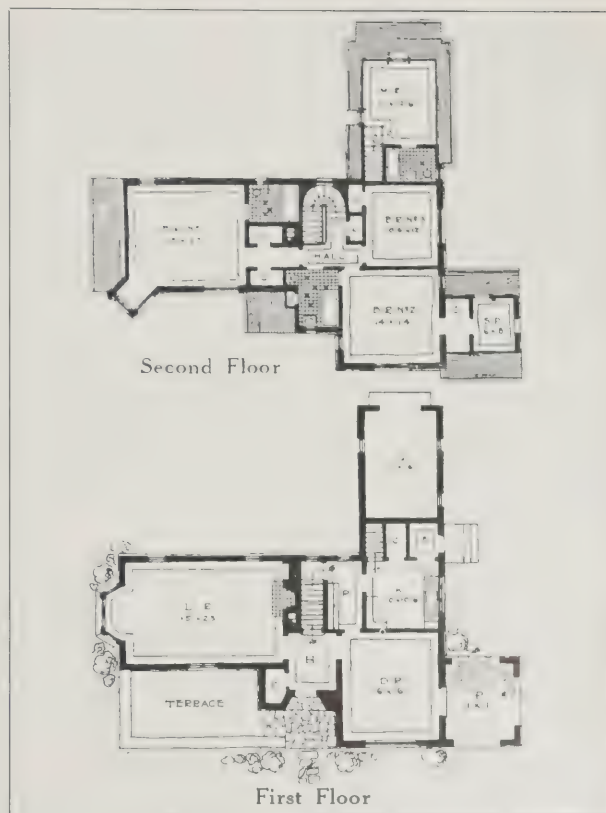
Photo. John Wallace Gillies

House of Mrs. Mary McKelvey, Spuyten Duyvil, N. Y.
Julius Gregory, Architect

it is the product of the understanding hand of the craftsman, done in humble reverence and with a feeling for his material. There is no striving for effect; nothing more than a straightforward use of wood, brick, stone and mortar in a simple and direct way, resulting in a surface that is hand-made, beautiful to look at, and one that will be satisfying through all time. Pleasing texture gives, in a large degree, that element of livableness we so much admire.

Another feature of these old English cottages, and hardly less important than that of texture, is simplicity of mass; large, restful areas of wall and roof with sparse spotting of openings; the windows grouped together and not many in number; the simple doorways, usually framed in oak and with solid, aged doors. The roofs, whatever the material, were seldom broken up by dormers. The passing of time has left its imprint on these,—the sagging lines of the old ridges and rafters, the toning of the old slates and tiles, evidences of a craftsmanship more beautiful than the result of labor of man's mere hands.

The old timbering is beautiful with its definite structural form and intelligent use, and its textural quality of surface. The precious old oak, put together to stay, mortised, tenoned and pinned in a wholly consistent manner, was adzed and planed down to a surface of beauty. Sometimes it was stained to contrast to the surrounding material; often it was left to weather to a soft gray; it has always satisfied our



Plans, House of Mrs. Mary McKelvey
Julius Gregory, Architect



Photo. Sigurd Fischer

Carved Entrance Doorway, House of Miss Cora A. Week, Riverdale, N. Y.
Julius Gregory, Architect



Photo. John Wallace Gillies
ANOTHER PICTURESQUE ENGLISH TYPE HOUSE AT SPUYTEN DUYVIL, N. Y.
JULIUS GREGORY, ARCHITECT

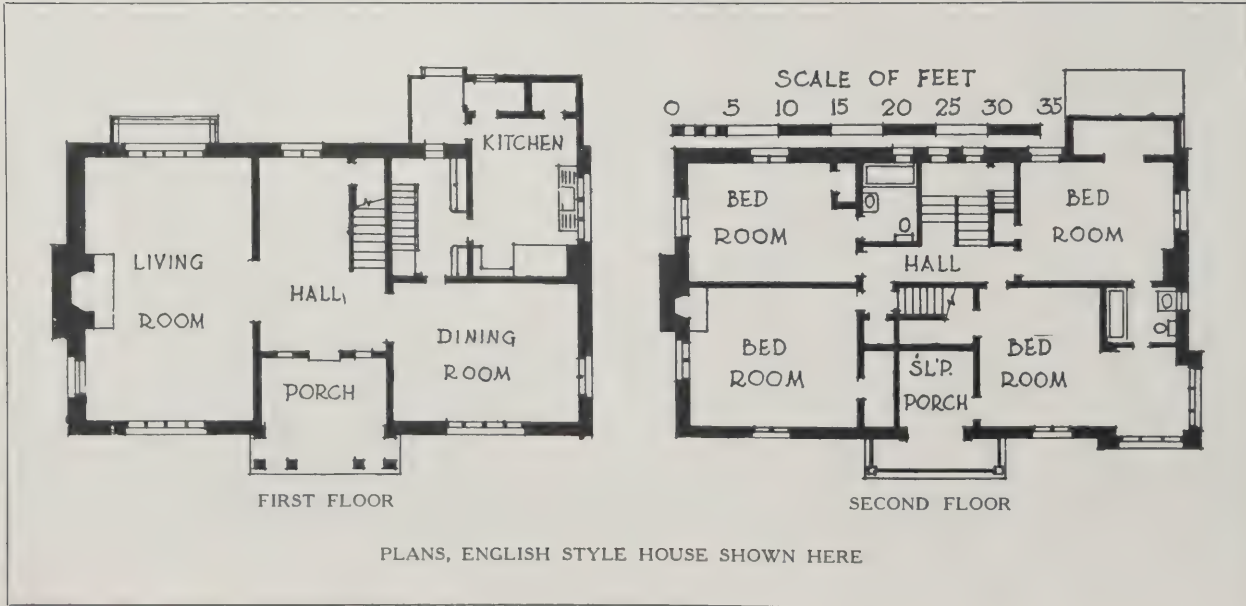
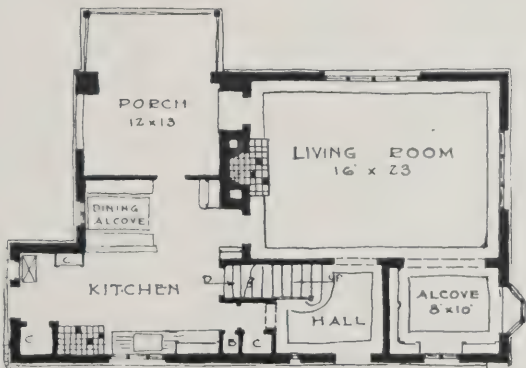


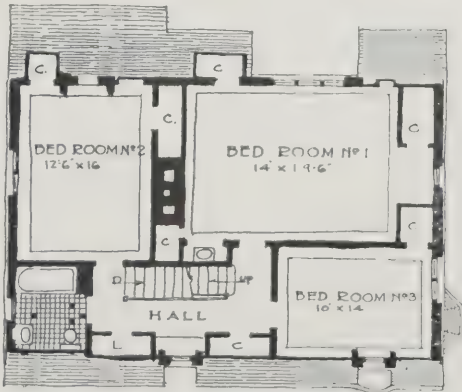


Photo. Sigurd Fischer

ANOTHER VIEW OF HOUSE OF MISS CORA A WEEK, RIVERDALE, N. Y.
JULIUS GREGORY, ARCHITECT



FIRST FLOOR



SECOND FLOOR

PLANS, HOUSE OF MISS CORA A. WEEK

feeling for strength and beauty. Inside the old house the same qualities of structural honesty, simplicity and directness, and softness of texture prevail. These elements dominate throughout the old buildings and aid in making them beautiful.

Our modern houses must be worked out in this spirit of the old work to be good; the timbers that show must be structural, not superficial, and the textures made with the instinctive freedom of the real craftsman, and not a striving for new or unusual sur-

faces. There must be a simple relation of materials and masses. A true feeling or conception of the straightforward uses of building materials in a natural way is essential. We can verify our ideas by reference to beautiful old work in our endeavor to get the spirit of settled genuineness inherent in the old buildings,—nothing more. It is wholly a matter of spirit; but before we can build in the old manner it will be necessary to unlearn much and to acquire a different point of view regarding building.



Photo, Sigurd Fischer

Living Room Alcove, House of Miss Cora A. Week, Riverdale, N. Y.
Julius Gregory, Architect

Some Considerations of the Colonial Style

By AYMAR EMBURY II

APPARENTLY it is at the present time impossible to design a building of any kind without putting a label on it, and no matter whether it is a 20-story office building or a five-room cottage, it is described as belonging to one of the traditional schools of architecture. Even the magnificent Shelton Hotel, which of all our larger buildings is the truest exponent of modern architecture, is often spoken of as "Byzantine" or "Romanesque" because on its first story some of the ornament feebly recalls the treatment of columns and arches common in Europe in the ninth and tenth centuries. As to the country house,—it seems impossible to design a building which is just a plain house, and not an "excellent example of the use of the Colonial"—or English—or Spanish—style, or whatever it may be.

It is impossible that this hyper-sensitiveness to the indelicacy of design without a label is in the end a good thing, since the architect, serene in the consciousness that his work is a shining example of the work of whatever school he prefers, is enabled to go

ahead and design to meet his conditions, introducing whatever anachronisms he pleases, without fear of criticism of his work purely on its merits as a piece of architecture. He realizes, perhaps subconsciously, that just as long as he can adduce a precedent or even the shadow of a precedent for every detail of his building he cannot fail to please the conservatives who in any age form the powerful majority, and within the limits set by these precedents, he is at liberty to progress just so far as his own capabilities will permit,—which is after all a rather healthy condition of things. In Europe, on the other hand, the man who makes use of historic motifs is *ipso facto* condemned for lack of real ability to design, and in most modern European work (even including the English) the careful avoidance of *all* traditional solutions of the various problems which confront the architect has produced what can hardly be called an architectural style, but only a number of buildings of little or no intrinsic beauty which frequently negate the creed of the modernist school of thought



Photo. George H. Van Andā

House of Yale Stevens, Esq., Rye, N. Y.
H. M. Woolsey and B. F. Chapman, Associated Architects



Detail, Living Room, House of Yale Stevens, Esq.
H. M. Woolsey and B. F. Chapman, Associate Architects

in that they do *not* express in simple and logical forms their purposes, and are *not* perfectly adapted to their uses, two prime tenets of modernist belief.

In any generation, and in any field of work, men with even a single spark of creative genius are rare; the multitude must be content to follow the leaders; and when the leaders themselves are floundering in a mire of indecision, knowing not whither, the work of the lesser men must inevitably be pathetically formless; and when, as in Europe today, one can recognize no man as inspired, no work as something genuinely fine and eternally beautiful, the situation in architecture seems pretty nearly hopeless.

Here we are in better case. Safe under the wings of that greatest and most useful of our national virtues, hypocrisy, we, while pretending and from long habit almost believing that we are proceeding along the safe traditional lines, are able to depart from them so far as we may wish; pulling the old motifs a little this way, pinching them a little the other; borrowing from some other period where precedent fails us in the one chosen, and winding up with a design which would appear to an authentic architect of the period as a work from another age and land,—as indeed it is. Even in the matter of rational expression of use and purpose we labor under less of a handicap than does the European, and by that we succeed in greater measure, since we are little concerned with external form, but most with



Photo: H. D. Barlow

House of E. J. Hopper, Esq., Ridgewood, N. J.
Thomas C. Rogers, Architect

the practical problems of convenience and light and ventilation. We know that with our plan established we have at hand the whole history of architecture from which to borrow forms to clothe the structure, and we refuse to consider the question of their propriety any more than the architect of the Italian Renaissance considered the structural principles of Roman architecture. From this arises much of no great significance, but also much that does constitute a real advance in architectural design. There is unquestionably too much effort spent in reproducing the architectural beauty of the past without much thought as to its fitness to the object to which it is applied, but this is a fault shared with the most admired of the men of the new school, and it may be questioned as to whether McKim, Mead & White's great Doric order on the Pennsylvania Station is more of a piece of stage scenery than are the towers of Saarinen's station at Helsingfors. This may seem a far cry from the small Colonial house; in size it is; in principle it is not. Many if not all of the houses called in this issue of THE FORUM "Colonial" are really as different from authentic work of the Colonial period in America as Saarinen's station is from the work of the Roman architect, although roughly speaking they are derivatives from it. Let us set down those characteristics of Colonial work which are tangible and see where we stand, since few of us have ever actually defined Colonial:



Fireplace, House of Yale Stevens, Esq.
H. M. Woolsey and B. F. Chapman, Associate Architects



Photo. Kenneth Clark

House of H. A. Groesbeck, Jr., Esq., Chappaqua, N. Y.
Melvin Pratt Spalding, Architect



Photo. H. D. Barlow

House of Rev. Angelo Zabriskie, D.D., Ridgewood, N. J.
Thomas C. Rogers, Architect



Entrance, House of E. D. Wilson, Esq., Fieldston, N. Y.
Dwight James Baum, Architect



Second Floor



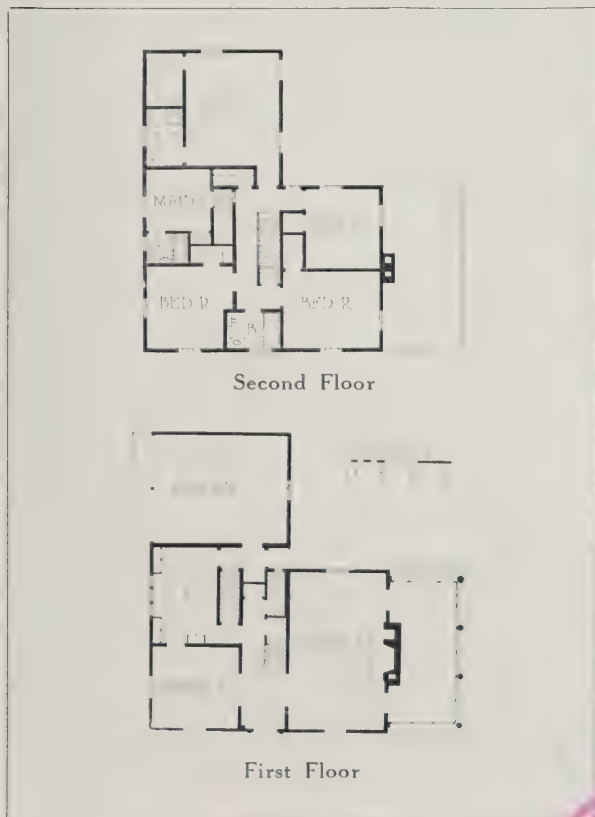
First Floor

Plans, House of Rev. Dr. Zabriskie
Thomas C. Rogers, Architect



Photo. George H. Van Anda

House of Ernest L. Cosgrove, Esq., Bronxville, N. Y.
Henry Rowe, Architect



Plans, Ernest L. Cosgrove House



Entrance Detail, House of Ernest L. Cosgrove, Esq.



Entrance Detail, House of Dr. Francis Collins

No Colonial building had a double or triple window, except at the center of the principal facade, where the Palladian motif was occasionally employed.

No Colonial house ever had a French window.

No Colonial house ever had a double doorway in the interior, and very few on the exterior.

The Colonial cornice rarely exceeded in height one-twentieth of the height of the facade from the ground to the bottom of the cornice, and the projection of the cornice rarely exceeded one and one-half times its height (except in the projecting eaves of the Dutch Colonial work).

All windows were fixed or double-hung, and divided into lights of glass not exceeding 12 inches in width and 15 inches in height.

Piazas were rare except in the South, and columns of two stories were practically unknown except in public buildings (Mt. Vernon to the contrary notwithstanding).

The main facade of the principal mass was symmetrical or nearly so, often to the great detriment of the plan.

No paints were used except white, red, green and sometimes straw color; and it is questionable whether the latter was used before the Revolution.

In masonry buildings no openings were used which could not be spanned by masonry arches or lintels or wood beams. This is particularly true.



Photo. Paul J. Weber

House of Dr. Francis Collins, Fieldston, N. Y.

Dwight James Baum, Architect

These are the outstanding physical features of the Colonial style, but even if a building were designed with careful adherence to every one of these characteristics, would it necessarily appear to be a genuine Colonial house? It seems improbable; for just as no religion can be based on a series of prohibitions, so can no good architecture be based on a list of "don'ts." To one as to the other is necessary a certain vitalizing and driving spirit, and it was to this rather than to the physical features imposed by the structural limitations of the time that we owe the primly picturesque quality of the old work. That spirit died when the nineteenth century was born, and the attempt to resurrect it in its entirety is hopeless. Nevertheless, we are today doing work which is in itself possessed of considerable charm, and which can roughly be described as "Colonial." The label does not matter; the work assuredly does.

It seems, to the writer at least, that in this derivative from the Colonial lies the future of our architecture, at least in the northern part of the United States, for reasons which are neither profound nor commonly understood. In the first place, it is a rational method of achieving the desired results. A house is first and principally a place in which to live, and not something to be looked at, and the square box of the Colonial building gives a maximum of usable space at a minimum of cost; and no sys-



Entrance Detail, House of T. A. Spencer, Esq.
Joseph W. Northrop, Jr., Architect



House of William J. Devine, Esq., Englewood, N. J.
R. C. Hunter & Bro., Architects



Photo, Febbs & Knell, Inc.

HOUSE OF CHESTER T. ALPAUGH, ESQ., NEW ORLEANS
MOISE H. GOLDSTEIN, ARCHITECT



HOUSE OF WALLACE GILL, ESQ., GLENCOE, ILL.
R. C. HUNTER & BRO., ARCHITECTS



tem of architecture which is unsound economically can be enduringly successful, regardless of its æsthetic merits. Our climate requires bedrooms with much window area to admit sunlight in our cold winters and air in our long, hot summers; these we get in the Colonial house, and we do not get them in the house patterned after the long, low English cottage, admirable as that is in appearance and satisfactory in a country where by our standard spring merges imperceptibly into fall, and to fall succeeds another spring. The Colonial type means rooms without projecting corners or sloping ceilings; rooms easy to furnish, and easy to clean and wasting little area.

It may be argued that houses of the so-called Mediterranean type, the houses of the Spanish and Italian school, can also be designed to give such rooms; but if this is done the characteristics of that type are destroyed.

Instead of the heavy walls and few windows with the deep reveals of the Southern buildings, we are likely to have walls so thin that reveals are not possible; and comparatively few clients could be induced to permit the ample wall areas, unbroken by windows, which give to the Italian and Spanish buildings so large a part of their charm. Then again, even were we to use the identical materials of which the walls of these buildings are constructed, we have not the wealth of mechanics,—half masons and half sculptors, instinct with the decorative traditions of centuries,—to provide the stonework of the old Italian and Spanish houses. Everything would probably be changed or modified in the interest of cheap-

ness, with a more or less complete loss of the architectural character which renders the European houses so beautiful.

There is something essentially false in imitating the poor and careless work of the peasants of Europe to house our opulent and exacting civilization. No greater harm has been done to architecture in our generation than has been caused by the craze for "hand work," whether by William Morris or by the little decorator around everybody's corner, whose highest word of praise is "crude." The beauty and charm of much of the old, naïve, rough, unknowing craftsmanship of past centuries is undeniable; but its day is past and cannot be brought back; and any conscious imitation of its methods, whether in the broken and patched glass of the Harkness Memorial at Yale or in the rough beams hewn from sawn lumber in the living room of some tiny cottage, brands itself as false.

It is therefore from the Classic style, the style of architects and not of guildsmen, that we must expect our architecture to be derived, for architecture is derived, not created; no man in its whole history ever sat down and deliberately created so much as a new ornamental form; and it is naturally from that variety of Classical architecture nearest us, in both time and space, our own Colonial, that derivation is most logical. We shall not do many more buildings that are literal copies of old work, nor very many in which all the old traditions are preserved; but from our own Colonial will spring—*has sprung*—an architecture found to be perfectly suited to our needs.



Photo, Paul J. Weber

House of E. D. Wilson, Esq., Fieldston, N. Y.
Dwight James Baum, Architect

"Bungalows" in the Colonial Style

By D. WEST BARBER

Barber & McMurray, Architects, Knoxville, Tenn.

THE type of house in which all or most of the important rooms are on one floor is becoming more and more popular, and I believe its popularity will survive this present day of rapid changes and passing fads. The true "bungalow," when thoughtfully planned and honestly built, makes one of the most charming and livable of homes. It is suitable for use in suburb, town or country, and has even been adopted for use on the roofs of some of our skyscrapers. It may be of any desired size, from the small cottage to the large country house.

The word "bungalow" has been very much misused and abused, at least in the section of the country in which I live. A few years ago the majority of people called any new house a "bungalow," no matter what the style, nor how crude the architecture. The term was applied so indiscriminately that people of good taste came to speak of certain styles of houses as "bungle, Oh's!" Because of this misuse, the word "bungalow," has long since fallen into disrepute. A client recently came into our office, and early in the

conversation said, "I do *not* want a *bungalow*! I want a cunning little one-story cottage, something like that you did for Mr. Smith out on the Pike." Of course the word "bungalow" was not mentioned again to her, nor did it appear on the drawings for her house. We need a new word, which will mean the same, but will leave a fresh, sweet taste in one's mouth! The present word is badly overworked.

I think we are all willing to admit, openly or secretly, that the so-called Colonial style is the lawful and splendid heritage of a large part of our country. Moreover, it can feel at home in any part of the United States, for it is the style that is best suited to the average American temperament. In this connection, I may say that there are quite a number of towns and villages here in east Tennessee, the beginnings of whose history antedate the Revolution. These towns have a priceless architectural heritage, which gives them a delightful character. This shows even through the tawdry embellishments that have been added in later days. A few individuals are be-



House of Clifford Pangburn, Esq., Chappaqua, N. Y.

Melvin Pratt Spalding, Architect



Photo. Tebbs & Knell, Inc.

House of O. G. Gresham, Esq., Birmingham, Ala.

Warren, Knight & Davis, Architects

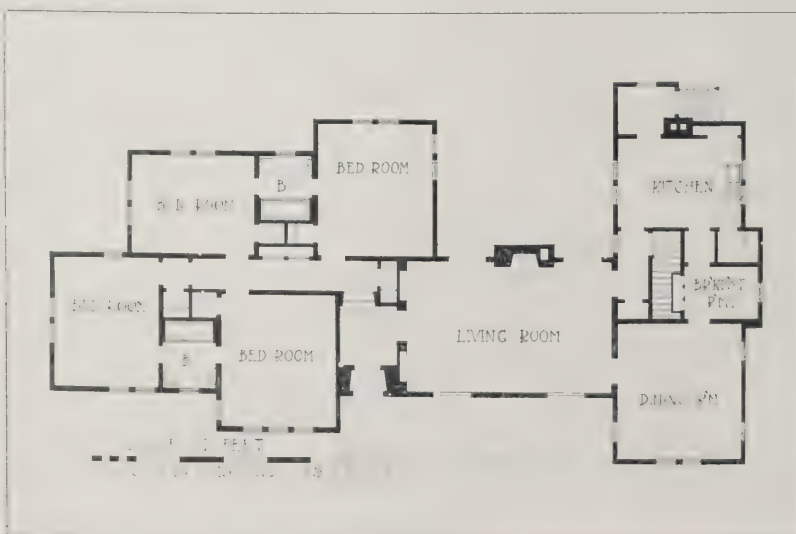
ginning to appreciate the long neglected traditions of the early builders, but it will be many years before these traditions are generally recognized at their true value and before the earlier types are followed.

One indication that the Colonial style is best suited to our use, is that it does not have to be adapted, excepting to meet modern living conditions and con-

struction methods. It is ours to use as it stands. We all like to play with the imported modes, and many of our clients insist on using the English, Spanish, or what-not, for their homes. But we know in our hearts, that, in order to give our clients good, American houses, we must dilute the chosen styles to such an extent that the houses, when completed, will be less



Entrance, O. G. Gresham House



Plan, O. G. Gresham House



Photo. Thomas Ellison

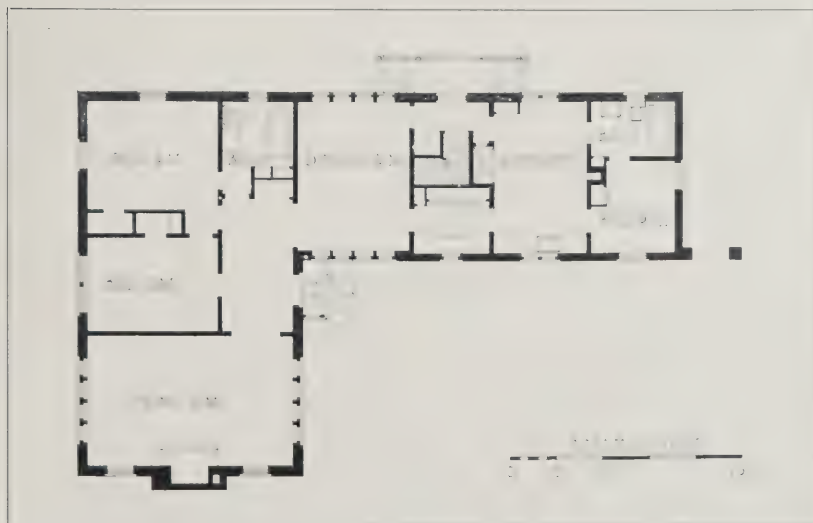
House of C. B. Crouse, Esq., Grosse Pointe, Mich.

Marcus R. Burrowes, Architect

interesting than their prototypes. We do not see how Mr. McManus, perhaps, can build a Moorish house in the suburbs of, say, Baltimore, and live in it comfortably. The house would probably be colorful, and very interesting, and a wonderful place for a garden party, but in our opinion mighty poor architecture.

To the client who wants a "bungalow" that he can

really call home, we heartily recommend the Colonial style, for various reasons besides that of historical appropriateness. The good American precedents at our command include all types, from the very early Colonial, almost pure English, to the late Georgian type; from the rugged and picturesque, to the formal and dignified and to the delicate, graceful, fem-



Plan, C. B. Crouse House

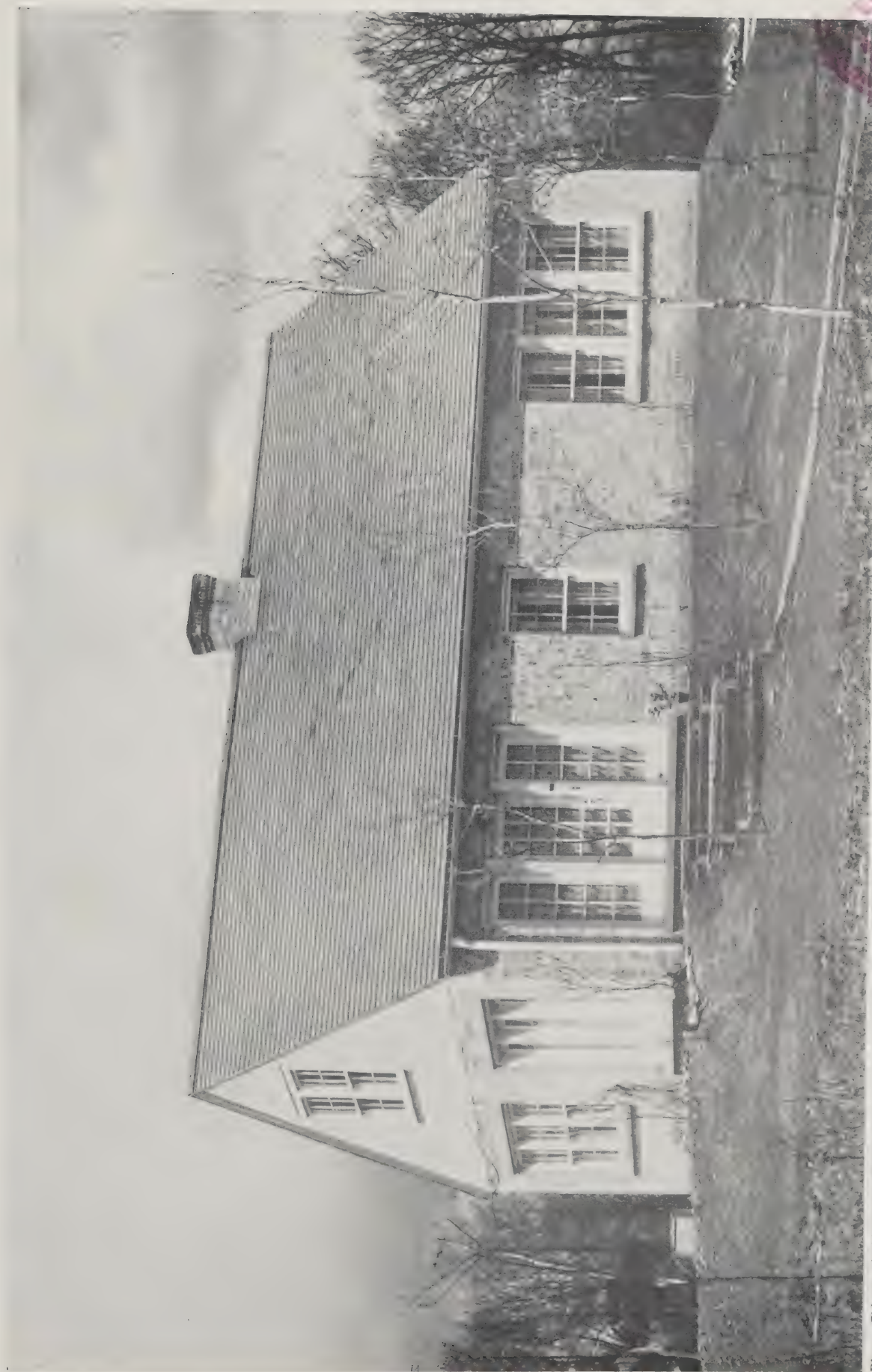


Living Room Wing



HOUSE OF LE ROY PERCY, ESQ., BIRMINGHAM, ALA.
WARREN, KNIGHT & DAVIS, ARCHITECTS

Photo, Tebbis & Knell, Inc.



Photo, Chicago Architectural Photo. Co.

HOUSE OF WILLIAM OTTEN, ESQ., GLENCOE, ILL.
S. S. BEMAN, ARCHITECT

inine type. Included in the range of our choice, should be the types resulting from foreign influences, which came to our architecture and were assimilated at a time when styles did not change overnight. Among these foreign influences were the Dutch, the French, and others which might be named.

To those who must be economical in building, and this includes most of us, we can say that our experiences have taught us that the Colonial house can be built for less money per cubic foot than can any other type. It can be built using ordinary local materials, produced by modern manufacturing methods, and used without sham. The simple rectangular plan can be developed into a thoroughly interesting house possessing real character more easily and economically in the Colonial than in any other style.

I would say a few words about the problem of building a bungalow on the ordinary city lot, with 40 to 50 feet of frontage. The time has come when nearly every householder owns an automobile. With the motor has come the private driveway. This driveway usually runs past one end of the house toward

the rear of the lot, thus reducing the apparent width of the plot, and the usual center entrance walkway cuts the lot up into a series of narrow strips of lawn. The apparent solution, which works well in most cases, is to place the end of the house toward the street, have a corner or side entrance to the house, and eliminate the superfluous central walkway. Further interest may be obtained by attaching the garage to the house, or connecting the two with a covered passage. Also, more frequent use should be made of the services of the landscape architect, who can do wonders in a small area. The problem of planning for the small city lot is difficult and is seldom solved satisfactorily. I think that the principal reason for this is that architects and owners have ignored the changed conditions under which present-day building is often done and have not tried hard enough to climb out of the rut. Vastly more could easily be done with even the average city building lot than is now ordinarily accomplished. It requires the coöperation and united effort of owner, architect, and nurseryman or landscape architect.



Detail, Le Roy Percy House



Entrance, Clifford Pangburn House

Small Houses in the Formal French Style

By PHILIP LIPPINCOTT GOODWIN

THE art,—or perhaps it could be called the pastime,—of adaptation in the domestic architecture of this country has recognized few geographic boundaries and few racial or historical consistencies. Not infrequently aided by our clients, we have drawn from many lands and many ages to create the composite thing that is sometimes called the American country house; and whatever else may be said, we are at least doing our work of adaptation better and more intelligently than we once did.

Naturally, the first colonists drew largely upon the traditions of their mother countries when they built in America, and they produced true types because the houses they built were built on their own lives and experiences, modified by the conditions and resources with which they had to reckon in the new country. The Classic Revival, which came early in the nineteenth century, produced a type which differed greatly from the early Colonial work, because it was the product of erudition rather than a natural expression. Also, it was a style which, in some respects, resembled much of our present architecture. There were no climatic, structural or even architectural reasons why people should build houses to resemble Greek temples, either in the Southern or

in the New England states,—but they did, and often did it very effectively, considering how inherently unsuited to the domestic requirements of a dwelling is the Parthenon, or any other Greek temple. It was a genuine enough expression, even though it was far-fetched, in that it expressed a fashion of the times,—“the Classic taste,”—that impulse which inspired alike Jefferson in the building of “Monticello,” and a retired whaling captain in the building of his house on remote Nantucket.

Certainly the houses of the Classic Revival, even the worst of them, were infinitely better than the houses of that period of ignorance, sheer depravity and bad taste which followed, and which lasted practically until the Columbian Exposition in 1893. It was Mr. Cram who said that the year of the Philadelphia Centennial, 1876, found us “architecturally, the most savage of nations.” Nor, excepting for the influence of Richardson toward the “picturesque” type of house, could much be said in praise of our domestic architecture of the decade from 1890 to 1900. Aside from a prevalence of poor design, we made the hopeless mistake of trying to build picturesquely with machine-made products. From that time forward one style after another has come into the field of



From a Rendering of Proposed Houses at Coral Gables, Miami

Philip L. Goodwin, Architect



Photo. Philip B. Wallace

GARDEN FRONT



HOUSE OF RICHARD E. BISHOP, ESQ., GERMANTOWN
EDMUND B. GILCHRIST, ARCHITECT

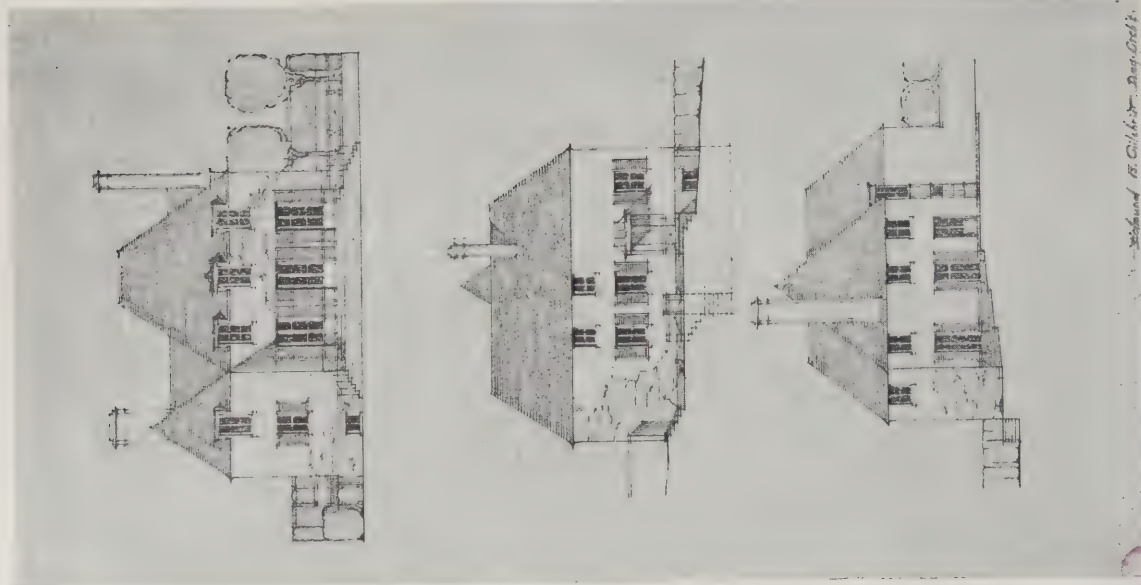


Detail, House of Richard E. Bishop, Esq.

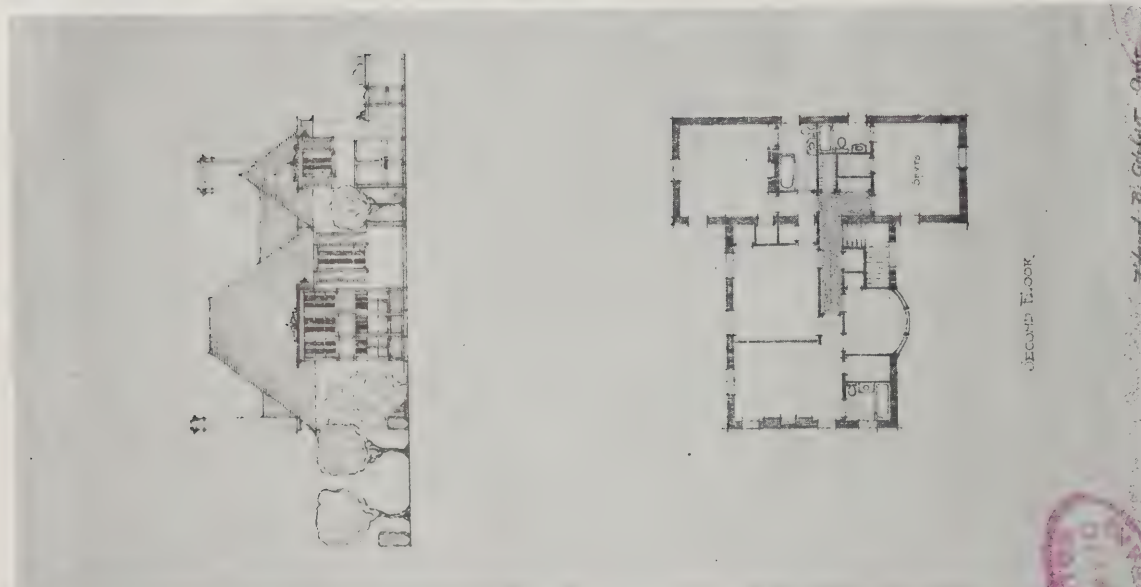
adaptation here, and the work of translating foreign architectural idioms into expressions of American requirements in country house design has been done with constantly increasing skill and intelligence. Today, the domestic styles of England, France, Italy and Spain contribute to our range of precedents. Into the picture, naturally enough, has come a note of sophistication, and a desire on the part of some clients and some architects to express this quality.

It would be interesting to trace, if it were possible, the origin of this note of sophistication in our architecture, and to discover at exactly what point we ceased making unconvincing limitations and began to build with a spirit of our own, rather than with a

borrowed sophistication. One observant architectural writer has expressed a belief that a definite difference in architecture and interior decoration has been observable in this country since the building of the Ritz-Carlton Hotel in New York. That hotel, certainly, profoundly affected the whole idea of our hotel architecture, and it is not at all impossible that it had a great deal to do with popularizing a certain kind of well bred sophistication that has become an expression of the real taste of a great many people in this country. The exact architectural quality of the Ritz is not easy to define with a single label. Essentially it has the sophistication of the Georgian English style of the brothers Adam, but it is per-

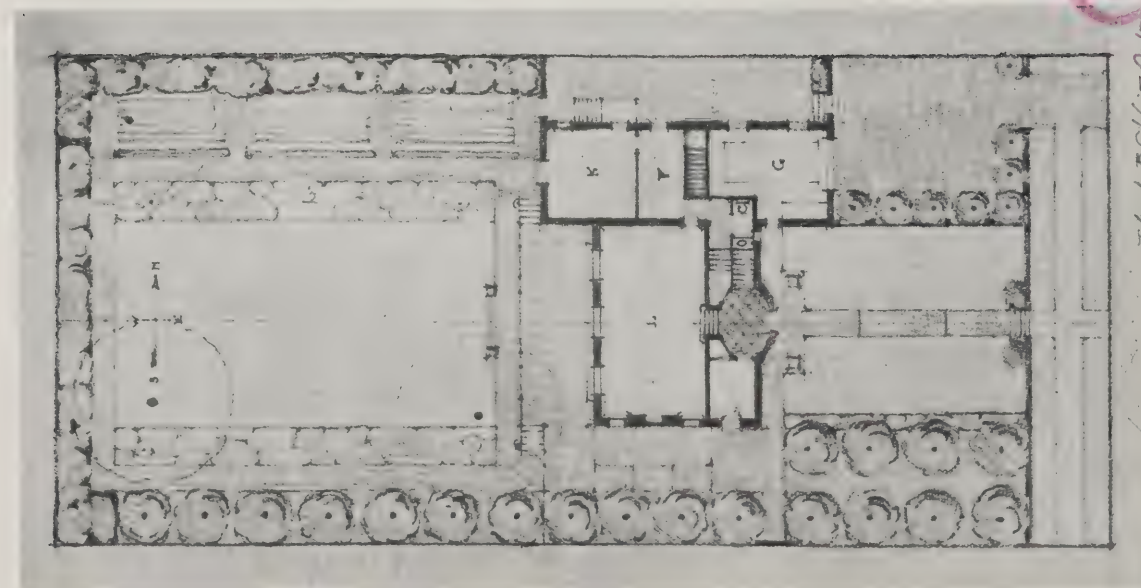


GARDEN AND END ELEVATIONS



SECOND FLOOR AND FRONT ELEVATION

SECOND FLOOR



PLOT AND FIRST FLOOR PLANS

FROM SKETCHES OF HOUSE DESIGNED BY EDMUND L. GILCHRIST
LATER BUILT BY FONTAINE FOX, ESQ., ON LONG ISLAND

vaded, too, by the same quality that is felt in the more restrained and formal architectural expressions of the eighteenth century France of Louis XVI.

For a great many years French architecture had meant to most people the profusion of Louis XV, the grandiose manner of Louis XIV, or a very rich version of Louis XVI. That there is such a thing as an extremely simple and very refined, yet highly sophisticated quality in French architecture, was not discovered until quite recently. It has now been discovered that architectural formality does not necessarily mean a palace or a great chateau, but that the whole essence and charm of that peculiar formality of eighteenth century France can be expressed in a most charming way in the smallest of buildings.

Much of great interest and of the utmost value to the development of our country house design has been done in the adaptation of the other type of the small French house,—the picturesque and informal farm buildings and cottages, the old types of Normandy and Brittany. The architects of the time of Louis XVI did this when they built the charming bijou play houses for Marie Antoinette at Versailles. This was a style that went back to the half-timber construction of the middle ages, and that expressed sophistication to the Louis XVI mind for the same reason that the shepherdess costume and beribboned crook were supposed to express sophistication to Marie Antoinette and her court ladies.

It is not, however, the purpose of this article to discuss the informal type of French small house, but rather the more formal type found in the minor chateaux and villas, and often seen in the gate houses

and hunting lodges of the period Louis XVI. This formal type is not one that lends itself to a very lengthy inventory, because its style lies more in feeling and mannerism than in specific details. Its most salient characteristic in form is the tall, steeply pitched roof of slate, with dormers that are a continuation of the main walls, breaking through the eaves. If there are dormers above these wall dormers, they are usually very small, and in shape are either elliptical or with curved tops.

Masses and profiles are rectangular, ultra-formal, with balanced and carefully proportioned fenestration, and usually with tall French windows on the ground floor. The wall surfaces are generally of stucco, smooth-finished, though sometimes of cut stone, and only the most simple details are used for incidents. Sometimes there are sunk panels of very flat relief, or mere blank sinkages above the first floor windows. The main doorways may show a little restrained elaboration; quoins are often seen; moulding are very flat and of simple composition; and all parts, characteristically of the whole Louis XVI manner, are in nice alignment and in perfect scale.

Formality in the small house is by no means easy to achieve, and the element of technique in the adaptation of this special type of French house is of the utmost importance if anything like success is to attend the result. The keynote of most small houses, quite naturally, is informality, because small houses have always been the cottages of unsophisticated people who have had neither the financial nor the architectural resources to build in formal styles. The situation today is different, and while the small



Photo. Chicago Architectural Photo. Co.

House of D. B. Douglas, Esq., Lake Forest, Ill.

Russell S. Walcott, Architect

house in America may or may not be formal and sophisticated, it is a long remove from the cottage of the peasant, and its ideal is invariably one that combines a highly developed standard of living conditions with an attractive and architectural appearance.

In Philadelphia, Mellor, Meigs & Howe have successfully translated the French type into country and suburban houses characteristic of Pennsylvania, in terms of local materials and their own admirable technique. And they have found its style by no means inflexible, because they have sought to utilize only its purely architectural spirit and not its literal forms. Their studies in this style have been by no means copies, and have not even attempted to be adaptations. They are Pennsylvania country houses of French descent, and illustrate the architectural accomplishment of taking certain salient features of a stylistic type and basing local design on them as a point of departure,—a procedure very different from setting, as the objective, a literal copy of the type. Also in Philadelphia, Edmund B. Gilchrist has been conspicuously successful in more direct adaptations of the formality of the style, which he has found to be perfectly suited to the design of the small villa in an American suburb. Perhaps Mr. Gilchrist's version is more true to type than any other Americanization of this kind of French architecture, though he has by no means tried to go back to eighteenth century France. His houses are essentially American, and yet in every essential way have preserved the spirit of the type they represent.

Although the small French villa is a formal type, its setting may be either formal or informal. It may

be set on a small terrace with a formal approach in miniature, utilizing clipped bay trees in boxes and garden beds laid out in symmetrical patterns, or it may be set in an old fashioned garden and treated more as a cottage than a villa. In either case much charm can be given its whole effect by embellishment with a little *treillage* in light green. Properly handled, this type of small house can be made a distinct addition to our domestic architecture, and this matter is largely one of sincerity versus affectation. In the past most of our architectural mistakes were due to a disastrous combination of ignorance and insincerity. Today ignorance is not so much to be reckoned with, but many adaptations of European styles have been lacking in merit because of insincerity. The designer did not quite believe in the thing he was doing,—and to make a successful adaptation the architect *must* believe in the style he is utilizing, to the utmost of his ability. This, obviously, is why architects in this country, despite their really extraordinary versatility, tend to become stylists. They design best in the styles in which they most thoroughly believe, and as their achievements in their best manner become definitely recognized by the public, they are called upon to design work in the styles that have won recognition.

As there is no specific American *locale* for the adaptation of the small French house, architects in all parts of the country may find in its purely architectural mannerisms an appealing field for study,—as they will assuredly find that without study the small French house is one of the most elusive and difficult of the types we have ever tried to Americanize.



Photo. Chicago Architectural Photo. Co.

House of S. A. Ball, Esq., Winnetka, Ill.

Howard Bowen, Architect

The Small House and Candor in Designing

By LEIGH FRENCH, JR.

IN the order of present-day affairs, the small house is an increasingly insistent factor, and it will not down. Every day and in every place it clamors for attention and forces itself upon our notice. Since it is a factor that cannot be eliminated, nor evaded without inflicting uncomfortable penalties upon us in revenge, we may as well address ourselves with a good grace to solving the problems it offers. For very easily understood reasons, the majority of architects are not keen to devote time and energy to the designing of the small house. To design well a single small house, in the way it should be done, involves relatively much more time and office expense than it does to design a moderate-sized or even a large house, and the return of profit is not only relatively but actually much less. And architects must live; few of them, even though they might wish to do so, could afford to run their offices largely from motives of philanthropy. Fewer still wish to specialize in small house design or become known as "small house architects." They know that it would soon cut them off from all chance of developing a more lucrative practice.

At the same time, acute housing conditions render it imperative to find some solution to the pressing requirements of the hour. The small house *must* be built, and it is going to be built. It is going to be built whether the architect designs it, or whether it is left altogether to the mercies of the speculative builder, who is usually a capable agent in the wholesale marring of neighborhoods. It is going to be either well designed or badly designed. From mere force of numbers its presence is inevitably going to give the dominant architectural tone to entire neighborhoods and, indeed, to the country at large. The small house, therefore, is a matter of concern, not

alone to those who build or live in it, but likewise to the general public—those who cannot avoid seeing it or else who must live in close proximity to it.

Except in the most unusual instances, the small house must be built inexpensively. Securing minimum cost is an inexorable condition. But, as well as being built with strict economy, the small house ought to be built for beauty and convenience. Most people, unfortunately, place beauty last on the list of requirements—as of least real importance. In our programs for architectural competitions, æsthetic requirements follow all others on the list. They are treated almost apologetically, as if they constituted concessions to an impractical taste which some people affect, but which are in themselves of no real importance. Perhaps this feeling is partly due to the quality of many of the samples of so-called art which abound. But true art is most practical; its very foundations rest on reason or common sense, and to make light of it is either to exhibit the instincts of the barbarian or the wisdom of the fool. In a work of construction made by civilized creatures, beauty should hold first place, for beauty depends on fitness, and fitness includes all practical considerations. Therefore, instead of "convenience, economy and beauty," let us write "beauty, convenience and economy," which is by far the more logical order.

Not only can beauty be successfully combined with convenience and economy in the construction of the small house, but good design can also materially help in securing convenience and economy. Furthermore, beauty or good design unquestionably renders the small house a more valuable asset, rated in actual dollars and cents, than the small house which is convenient and economical but which lacks beauty. Abundant experience has proved this beyond all



House Design for the Flegg Ridge Estate of Ernest Flagg, Dongan Hills, N. Y.

Ernest Flagg, Architect



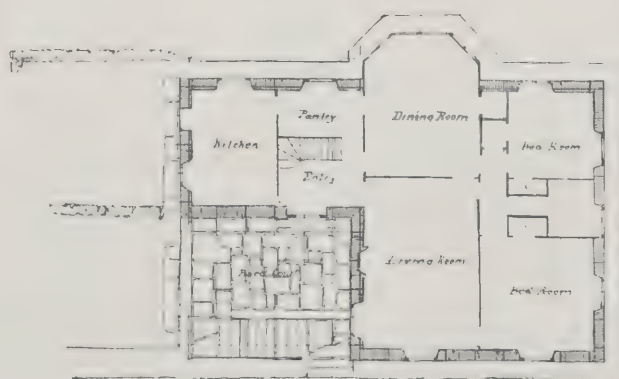
House Design No. 4 for the Flegg Ridge Estate of Ernest Flagg, Dongan Hills, N. Y.
Ernest Flagg, Architect

doubt. And the surest way to arrive at this result—the combination of beauty, convenience and economy—is by using candor and common sense in the methods of design and construction. Such candid and rational methods, I am persuaded, are exemplified in the small houses shown in the accompanying illustrations, designed by Ernest Flagg. They were designed and built with the solution of the problem just propounded very largely in view. The outcome has justified the expectations which were entertained.

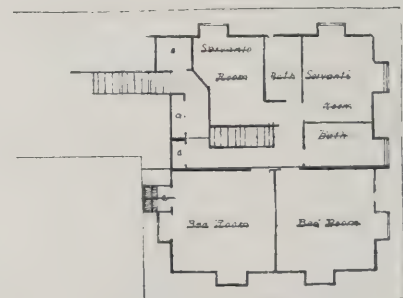
In no other way can the first of these objects,—the attainment of beauty,—be so well and so surely arrived at as by applying the fundamental laws of good taste or the correct principles of design; for it costs no more to build in accordance with them than otherwise. Indeed, it often costs less, for vast sums, in the aggregate, are constantly being wasted in vain attempts to obtain beauty which might easily be had without much effort or expense. To plan the house conveniently, it is necessary for the designer to have constantly in mind the proper relationship

which should exist between the various departments that go to make up the home. These divisions ordinarily are: (1) The public part of the house, if we may so call it, to which friends and visitors are customarily admitted, including the entry, living room or rooms, and dining room. (2) The private part, consisting of the sleeping rooms and their dependencies. (3) The service department. (4) The means of communication, such as passages, corridors, stairways and the like. (5) Places for the storage of household effects, fuel, trunks and wearing apparel. (6) Those parts which provide for the outdoor life of the family, such as porches, verandas, lawns, gardens and walks, parts of out of doors.

It is in the fourth of these items in planning which the greatest economies can usually be made. Means of communication are of course necessary, but if they are separate they are of no value for any other purpose, and if communication could be had without them, usefulness would not be impaired. It is highly important, therefore, where economy is neces-



First Floor



Second Floor

Plans, House Design No. 4



Front Elevation



Rear Elevation

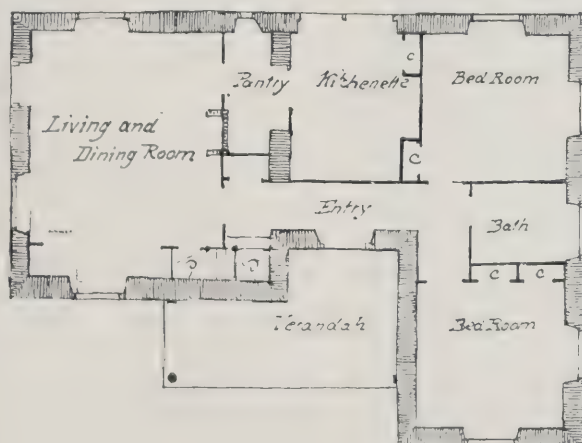
House Design No. 6 for the Flegg Ridge Estate of Ernest Flagg, Dongan Hills, N. Y.

Ernest Flagg, Architect

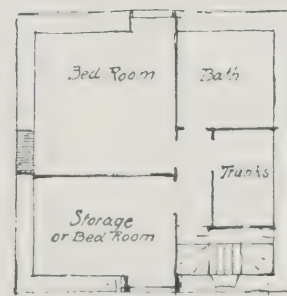
sary, to reduce to the limit of practicability the area devoted exclusively to communication,—not by pinching, but by elimination. Corridors cost as much to build and maintain as if the space they occupy were in rooms; indeed, they cost more, because the percentage of wall surface to floor area is greater. The skill and ingenuity of the planner can nowhere so well be shown as in reducing corridor areas without loss of convenience; that is, indeed, his chief problem. Anyone can plan with a liberal use of corridors, but it requires skill and ingenuity to plan conveniently without them. In the designs of the houses here illustrated great economy has been aimed at in the use of corridors. In general, the space devoted to circulation, including stairways, corridors and passages, seldom exceeds 10 or 12 per cent of the total floor area, and it is often much less.

Plans are frequently injured and much space and material are wasted by the construction of unnecessary partitions. One good room is often ruined for the sake of making two poor rooms, which together

do not answer the purposes for which they are used as well as would one larger room. Small houses are planned as if they were large, and subdivisions made which, however appropriate and convenient in a large house, had better be dispensed with in a small building. One subdivision, however, the planner of the very smallest English house thinks it necessary to make, and that is the "scullery," a subdivision seldom found on this side of the Atlantic. Every self-respecting English housewife requires a small place off the kitchen where pots, pans and dishes may be washed and all other unsightly work performed, and she is entirely right in this demand. The scullery is far from being wasteful; it is, indeed, a space-saver, for by means of it the usefulness of the kitchen is greatly increased. The actual work of cooking is neither unsightly nor uninteresting. In the very small house the kitchen, when relieved of all which is unpleasant about the preparation of food, is not a bad place to eat in, and the dining room may be dispensed with. In houses of



First Floor

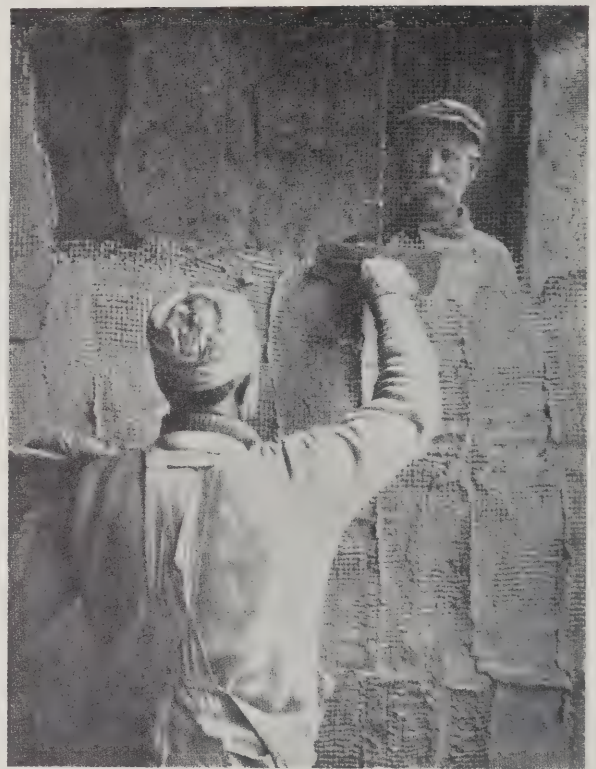


Plan of Upper Floor.

Plans, House Design No. 6



Jute or scrim partitions instead of studs and lath



Plasterers working against each other on wire lath

more importance, where two or more servants are employed, the kitchen improved in this way may take the place of a servants' dining room, while in still larger houses a scullery should certainly be considered an essential feature of household equipment.

Provision of sufficient storage space in the shape of ample closets is especially important in houses

such as these, deprived as they are of the usual attic space in the roof by the introduction of the "ridge dormer" or "shed dormer" which makes the whole space within the roof available for living purposes. The presence of such a dormer and the utilization of the entire area within the roof, much of which is ordinarily waste room, has the further advantage of making it possible to reduce the height of the walls, thus reducing construction costs at the same time.

While reducing waste space in the plan by eliminating needless communication area, doing away with unnecessary partitions, and gaining use of all the room contained within the lines of the roof, further legitimate economies can be effected in the matter of materials and in the manner in which certain features are constructed. One excellent way to save money in building is to be truthful, and in no one way can this be better done than in the matter of interior woodwork. The solid plaster partitions that have been used in these houses, built under Mr. Flagg's direction, made by simply hanging a section of



"Flagg Partition" in three stages of construction

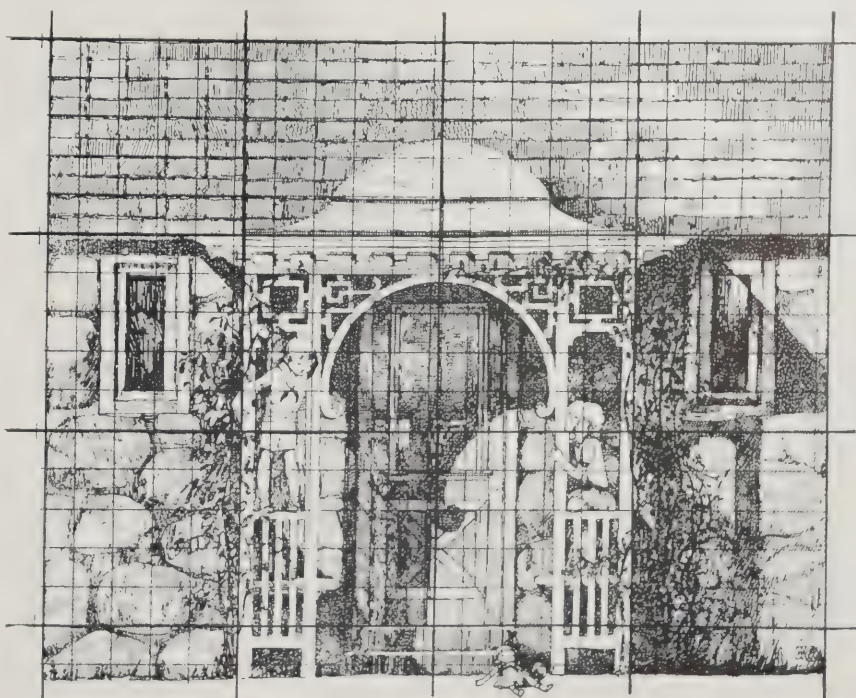


Ridge Dormers, Interior and Exterior

jute or scrim net and plastering both sides of it,—a method that has proved entirely satisfactory in point of solidity and strength,—render unnecessary the wooden studs and lath commonly used in making partitions. Such construction not only saves the cost of all these materials, their erection and maintenance, but permits of an important economy by omitting most of the ordinary trim or casing. If a doorway is made in the ordinary manner by constructing a frame around the opening (called a door-buck) and covering the buck with a casing after the plastering is finished, the true frame is concealed, and the visible architrave about the doorway is a sham.

In designing these houses it has been Mr. Flagg's object to save the cost of all such shams and counterfeits which, after all, are only concessions to convention and serve no structural purposes; therefore, no casings have been used, but the frames have been made sufficiently presentable to form the necessary finishes about the openings, the result being that more than two-thirds of the lumber and labor are saved,

and the appearance of the doorways is greatly improved. This is merely a return to old methods, for originally doorways were undoubtedly thus constructed. Straightforward methods of construction generally produce the best results, and this instance is no exception to the rule. Ordinarily, after the plastering is done the house is only half completed,



Porch Designed on the Module System



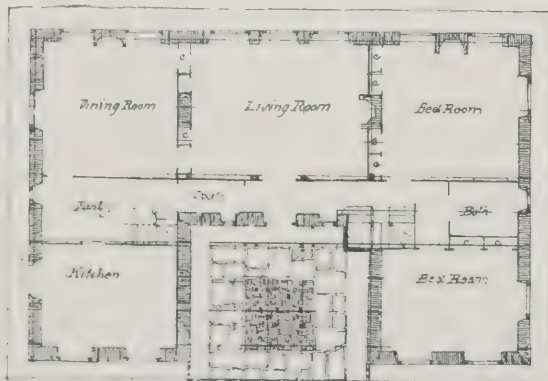
House Design No. 5-B for Flegg Ridge Estate

for the greater part of the carpentry work remains to be performed; trim must be applied to the door jambs, the doors be fitted and hung, window casing set, sashes hung, and bases with their mouldings must be installed. But, by the method advocated by Mr. Flagg, when the plastering is done the house is practically finished, for nearly all that work is eliminated. Nothing could well be more economical.

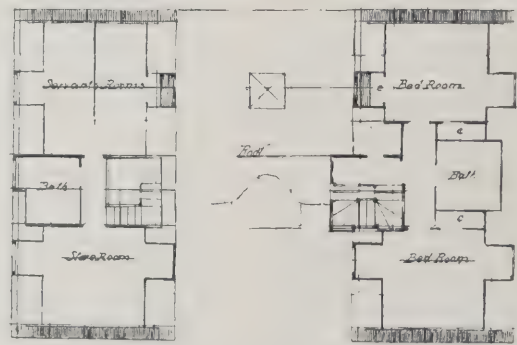
Hanging a door, under ordinary circumstances, is quite an operation and consumes much time, for

each opening when cased in with its sham architrave is bound to differ in size somewhat from the others, and each door must be separately adjusted. If the doorway is made in the manner here described, however, no such adjustment is required. In the shop the frames are put together of sizes to correspond to the doors, and the hardware applied. If the frames are set plumb, nothing remains to be done to them at the building but to place the doors on their hinges, which is the work of a moment. Thus a vast amount of material and much useless labor are saved, and a great deal of time gained. Nor is it only in doorways that useless materials are dispensed with. Similar methods apply to windows and all other places where casing is commonly used. Instead of building window boxes after the usual fashion, then covering them with false architraves, the frames themselves are moulded to adjust them to the sashes, and all casing about them, whether inside or outside, is dispensed with. By these means most of the ordinary woodwork of the house is omitted, and the cost of all that material saved,—also the cost of its installation, painting and upkeep. With thin partitions and narrow door jambs it is convenient to use the continental type of doors that have the rabbet on the door itself instead of on the jamb. They are easier to hang, and the hardware for them costs less and is better looking. When rabbeted doors are used the door frames need be no thicker than the plaster partitions; but if the rabbet is on the jamb it is necessary to use slightly thicker material.

Another considerable economy may be practiced by using beamed ceilings. Under ordinary conditions, ceilings of that sort are so troublesome to lay out and construct that they cost more than plaster and are found generally only in expensive houses, where the chances are ten to one that the visible beams are not real but only sham, for fear that solid beams might "check,"—the certainty of a fake being preferred to the possibility of a so-called defect of a different sort. Experience in building Mr. Flagg's houses has shown that a good deal may be saved by not concealing the beams. The cost of



First Floor



Second Floor

Plans, House Design 5-B

dressing the lumber and using a little better grade of material and workmanship than usual is more than offset by the saving in plaster; besides which, the space between the beams is gained. The ceiling is formed by the underflooring of the room above; upon this first covering comes a layer of building quilt, and on top of this are laid 1-inch strips of wood to which the upper floor is fastened. By thus exposing the ceiling construction, all plastered ceilings are eliminated and their cost saved, a considerable saving in time as well as in money.

Besides the possible economies just noted at some length, still further economies in construction can be carried out satisfactorily from every point of view by dispensing with a cellar under the greater portion of the house; by keeping down the heights of walls, and by building them of "mosaic rubble,"—laying the stones in wooden forms and shoveling concrete in behind them;—by using casements instead of double-hung sash windows, and by employing sundry other devices of straightforward, candid structure. These devices, it is true, undermine certain strongly entrenched conventions and prejudices,—for example, the elimination of door and window casings,—but they are sound structurally. They also affect design, but if good design and beauty, on the one hand, and structural changes that make for economy and are often a return to old methods, on the other, cannot be reconciled, it does not speak well for the vitality of modern architecture or the capability of modern architects; architecture must be practical.

Finally, if we make the most of all the opportuni-



"House on the Wall," Flegg Ridge



"House on the Wall," from South



Mosaic Rubble Before and After Pointing



Mosaic Rubble Finished



Perspective and Elevation, House No. 21, Flegg Ridge Estate, Dongan Hills, N. Y.
Ernest Flagg, Architect

ties of interesting composition, adaptation to site, arrangement of dependencies, garden planning and various other features illustrated in the type of small house under consideration, there is no good reason why "beauty, convenience and economy" cannot be happily and easily attained instead of submitting to the expensive ugliness and flimsy, faulty construction too often in evidence in the suburban developments of all our large cities. Wherever "beauty, convenience and economy" have been embodied in a well built small house, results have fully justified the sound business policy of such construction.

Editor's Note. When the foregoing article, which briefly describes some of Mr. Ernest Flagg's methods of construction for a less expensive but thoroughly practical type of small house, was submitted to Mr. Flagg he made these comments:

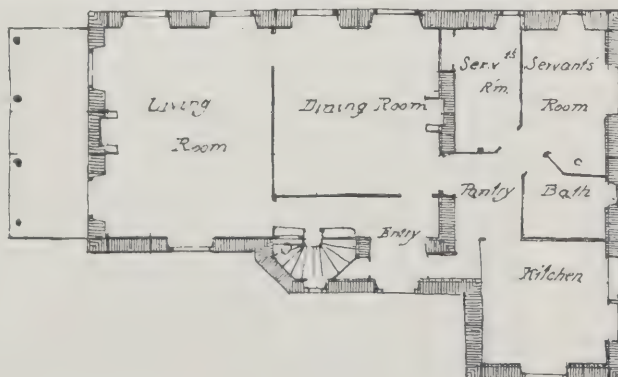
"That the statement of the case as presented in the foregoing article is correct, almost anyone with a knowledge of the situation will admit. It may be summed up in these few brief paragraphs.

"Under present conditions, men with sufficient ability to design a small house well can find more

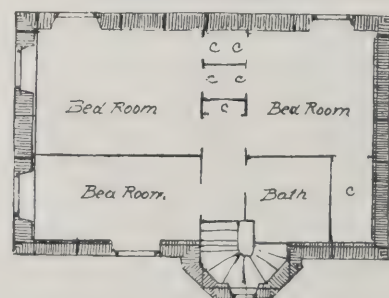
profitable employment of their time, and the designing of most buildings depends on ignorance.

"The manufacture of many things of low cost can be made profitable by quantity production, but this has limited application to house design. There is no satisfactory way of designing houses by wholesale. In general, each house, like its owner, should have its proper individuality, be fitted to its surroundings, the conformation of the land, the particular needs of its occupants and be made to meet other requirements of the situation which are individual.

"As old methods are incompatible with a satisfactory solution of the problem, I suggest a new method, the result of much study and experimentation. It is more fully explained in my book, 'Small Houses.' This method is based on the revival or adaptation of an ancient principle to modern needs, viz.: The use of a module. I find it very hard to make this understood. A great deal has been written by other persons about my way of building, but while they concern themselves with minor details and comparatively unimportant novelties, the gist of the matter is overlooked. That gist consists in the use of

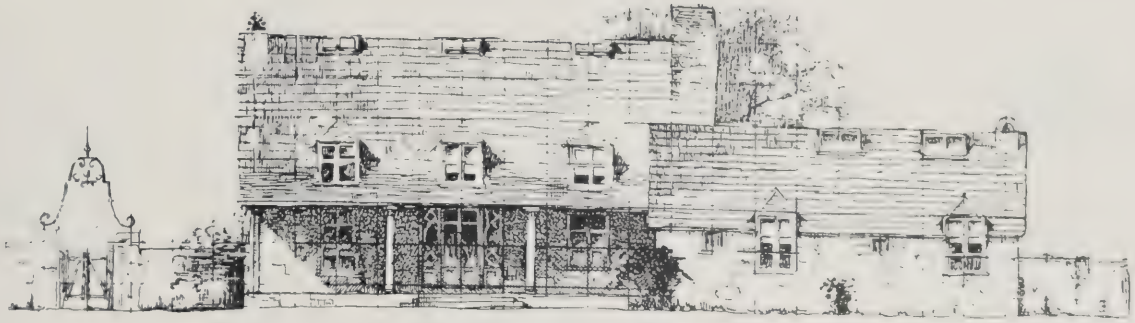


First Floor



Second Floor

Plans, House No. 21, Flagg Estate



Garden Elevation, Design for House No. 28, Flegg Ridge, Dongan Hills, N. Y.

Ernest Flagg, Architect

modules or building units in combination with a knowledge of the elementary principles of design as explained in my book. Thus equipped the designer of small houses can make all the money he ought to, provided he has enough to do to keep him busy, and the small house field then becomes attractive. I can perhaps best explain this by describing my own procedure when I am engaged on work of this kind.

"I value my time at at least one hundred thousand dollars a year, and if I could not make money at that rate when I work, I should be ashamed of myself. I find that by the use of the equipment just mentioned I can design several small houses a day, provided I have them to do, at an average profit after deducting the cost of draftsmen's time and 100 per cent overhead expense, of from \$100 to \$500 each. The working drawings consist of a single sheet for each of the houses and a set of standard details, with directions for use. I charge for this work $2\frac{1}{2}$ per cent. At several times this rate I should lose money by using ordinary methods. I do no supervising, leaving that for the local architect. The plans, details and directions are so complete that he has

little to do beyond implicitly following instructions.

"The use of the module makes it possible to obtain, with certainty, those simple or primary ratios of proportion which the eye recognizes unconsciously, just as the ear unconsciously recognizes corresponding harmonies in sounds. It was the use of this principle which differentiates Greek art from all subsequent art. Incidentally, I hope that a good deal more will be known about this matter after I publish a book I am now writing on the subject. By this simple means beauty may be had without applied ornament, for the structure itself becomes an ornament. Its beauty consists in its form and outline, which are governed by the use of rules and not left to chance, which is often fatal to beauty.

"The unit permits of great rapidity in the making of plans; no figures are required, yet the exact size and location of everything are shown with much more precision and accuracy than old fashioned methods permit of. The building unit makes possible a huge reduction in the cost and difficulties of construction, facilitating the accurate laying out and execution of the work, and the standardization of parts. When



Street Elevation, House No. 28



House Design No. 16 for the Flegg Ridge Estate, Dongan Hills, N. Y.

Ernest Flagg, Architect

there is commensurability throughout all the work, standardized parts will fit and construction resolves itself to a mere routine in which, though the designs may vary indefinitely, conditions are always the same, and the workman knows exactly what to do. It does for house building what Ford's methods do for automobile making, with the difference that in this case it is the parts which are standardized, and not the finished product. The ramifications which grow out of the application of this principle, both for improvement in design and facility and economy in construction, are simply bewildering in their possibilities. Some time the truth of this will

be recognized, and when that happens there will be a complete readjustment of our ideas of all the arts of design,—at least of those applying to building.”

The great costs of construction, and the fact that any considerable reduction of such costs is not to be expected in the near future, lend a particularly strong appeal to whatever tends to lower building costs. Much can be done to promote economy in the use of material and in lessening the amount of labor required for a building. It is necessary, however, to consider the *quality* of construction as well as its *cost*, and to avoid cheap, flimsy building, but there are many economies which may well be employed.



First Floor



Another View, House No. 16



Second Floor

Plans, House No. 16

Small Italian and Spanish Houses as a Basis of Design

By WILLIAM LAWRENCE BOTTOMLEY

THE small houses of both Italy and Spain possess a powerful attraction to which the average American is usually quick to succumb. They all display strongly marked characteristics and individuality, and nearly all of them have very distinct picturesque value as well. In other words, they are outwardly prepossessing to a degree, and their engaging exteriors stimulate curiosity as to what their interiors may reveal. Furthermore, the question immediately occurs to the enthusiastic admirer, "Why can we not have houses like these in America?" We can have houses of very much this sort, if we like, and we are having some of them.

While fully admitting the great charm of the small Italian or Spanish house, and conceding that it possesses not a few features from which we can gather suggestions that may be embodied in the design of the small house in America, it is just as well that we should understand very clearly at the outset exactly what and how much we can or cannot expect to derive from our study of the subject that will have any practical value for us here when we come to expressing ideas in tangible and procurable materials.

The Spanish house of a certain type, the Spanish Mission house, may be said to be indigenous to California and the neighboring parts of the southwest, as well as to certain parts of Florida. It was the sort of house built in those places when the country was first conquered and settled by white men. It proved itself suitable and adequate to local conditions, and it has always maintained its hold. Indeed, at the present writing its popularity is decidedly in the ascendant in California and Florida alike, and has been for some years past. It has proved its worth;

it has won a firmly established position; it is a known quantity; and we are in no doubt about what we can confidently expect of it when the type is adopted.

This is not at all the case, however, with the small Italian house in any of its forms, nor with other types of the Spanish house. We have no such long standing familiarity with them as local factors for centuries past in American domestic architecture. Although a number of professedly Italian and Spanish houses of various types have been built in different parts of the country in recent years, architecture of this description may be said to be still in a relatively experimental stage. Not a few of these houses have been virtually reproductions of Italian or Spanish prototypes. Others, again, might just as well have been exact replicas, so punctiliously has even the smallest detail been copied from some authentic model. There has not yet been sufficient time for these comparatively new factors, as adaptations, to become completely assimilated into the composite of common usage and form a homogeneous element of approved and constant strain. Besides, these houses of Italian and Spanish parentage have been derived from precedents that cannot by any means be classed as examples of small domestic architecture, and here we wish to confine ourselves to small house considerations, these being our present limitations.

The type of Spanish or Italian building that offers most in the way of possibilities for adaptation to American small house needs is the peasant dwelling or lesser farmhouse,—the *casa colonia* of Italy and its analogue in Spain,—of which innumerable examples, in the greatest diversity of style, are to be found throughout the length and breadth of the Ital-



Half-timber House and Mill Outside the Walls of Cordova



Outside Stairway, Garden of the Casa de las Duennas
Seville

ian and Iberian peninsulas. The Italian types that most commend themselves to study are those which occur from the vicinity of Rome northward; those of southern Italy are picturesque enough, but they yield comparatively little that can be turned to advantageous use in America under different conditions.

The Campagna and the Sabine Hills afford a number of fascinating variations, nearly all of them more or less mediæval in character for, despite the universal introduction of electricity for lighting purposes and an occasional feeble attempt at modern plumbing in some of the towns, the daily living conditions of the peasants have changed but little since the middle ages or, at any rate, since the Renaissance. The Italian peasant is an exceedingly conservative person, and farming operations today are carried on as they have been for the past thousand years or more. What sufficed in the middle ages or in the Renaissance period to shelter the farmer's or the peasant's family and domestic animals answers just as well today. Indeed, many of the buildings date from those times, and have experienced little or no change beyond trifling repairs, during centuries.

Much the same may be said of the peasant's cottages and farmhouses in Tuscany and Umbria; almost every one of them is rich in suggestive value.



House of Morris L. Cooke, Esq., Center Bridge, Pa.
William Lawrence Bottomley, Architect

Again, the towered farmhouses of the Romagna, which, curiously enough, seem to be altogether unknown outside of Italy and unnoticed even there, are peculiarly attractive. So, too, are some of the peasant dwellings in the Veneto, where, now and again, a thatched and white walled cottage, not unlike some of the Surrey cottages, is to be met with. The small houses of the Trentino, likewise, and those of Lombardy, Piedmont and Liguria, all of them plainly bearing the local stamps of their several districts, furnish a rich reward to the student of architecture.

Despite the strongly marked local characteristics that differentiate the peasant houses of one Italian province from those of another, they all have certain features or, rather, certain qualities in common which make it possible for our immediate purpose to generalize about them. All of them, almost without exception, have a definitely picturesque value. All of them are exceedingly simple in organization. The simplicity, moreover, is not due to sophisticated elimination and the exercise of studied restraint, but to untutored artlessness. Hence there is very genuine spontaneity. There is a noticeable absence of detail, the charm lying in composition and visible, convincing construction. Then, too, there is always a frank, straightforward use of materials, with agreeable



Entrance, Garden Side



Garden Facade, House of Morris L. Cooke, Esq.
William Lawrence Bottomley, Architect



ENTRANCE FACADE, HOUSE OF FRED J. MILLER, ESQ., CENTER BRIDGE, PA.
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT





GARDEN FACADE, HOUSE OF FRED J. MILLER, ESQ., CENTER BRIDGE, PA.
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT

contrasts in texture and color. Fixity of plan is no more dreamed of than is uniformity of composition; the determining factors of plan and elevation are site, exposure and suitability for individual needs. In brief, the ancient dwelling of the Italian peasant very faithfully reflects certain traits of its builder and occupant. The Italian is conspicuous for his hard-headed common sense and directness of purpose. He is a stern realist, not an idealist. He has an appreciation of beauty, but he is not imaginative. Nevertheless, if left to himself, he can and usually does express his realism in a very ideal way, just as the old primitive painters did. It is part of his nature.

The Italian peasant house, then, makes its appeal to us through its austere simplicity, its directness, its flexibility to suit conditions of site and exposure, its contrasts of material, texture and color, and its sturdy straightforwardness in the use of materials and manner of construction, all of which are important elements in the picturesque value we so admire. It is well to remember, too, that as soon as any of these characteristics is lessened or obscured by too much polishing or refining in the process of adaptation, the charm disappears. Don't attempt to use a thin wall where the peasant wall would be thick, a smooth texture where the peasant texture would be rough, or a sawn timber where the peasant timber would be merely the unhewn trunk or branch of a tree with the bark removed. To do so will produce "pasteboard" architecture and stage scenery. The fustian qualities must be preserved in method if the charm is to be kept, and this charm is easily lost.

In the matter of plan the Italian peasant house has little or nothing to teach us. The ground floor is usually given over mainly to the storage of grain and housing the farm animals, while the kitchen, which is ordinarily the living room as well, time and again has no outer door and is entered through the stable, where bipeds and quadrupeds live on terms of friendly familiarity. There may be an inside stair to the upper floor, where members of the family sleep and store still more grain, or access may be only by outside steps. In spite of these peculiarities of arrangement, however, the Italian peasant house offers amazing possibilities of remodeling and conversion to a more polite fashion of living. Plenty of such remodeling has been done successfully in Italy.

What has been said of the Italian peasant house applies quite as well to the analogous types in Spain. In certain cases, the elements of austerity and sharp contrast are even intensified; the element of variety in composition remains about the same, for provincial characteristics are no less distinctly differentiated than in Italy. The Andalusian type, the type from which the Spanish Mission style familiar in California and the southwest was immediately derived, is noticeably different in appearance from the granite farmhouses of Segovia and Estremadura, the stone and stucco small manors and farmsteads of Catalonia with their open galleries or loggias at the tops, their frequently gabled compositions and their traces of

Gothic enrichment, the half-timber dwellings to be found in old Castile, the more genial forms that occur in the island of Majorca, or the galleried stone farmhouses with low roofs in the Basque provinces.

It is necessary here to add a word about the suitability of Italian and Spanish types for adaptation to the small house in America. Many people have the feeling that Italian and Spanish forms are appropriate only in sunny, southern regions such as California or Florida. This conception is probably due to the fact that most people have seen them in their native environment only in warm weather, and hence associate them with blinding sun and withering heat. As a matter of fact, not a few of the Italian and Spanish districts where these types are found have bitterly cold and inclement winters, far more severe than those in many parts of America where their architectural suitability is questioned. Strange as it may seem, there are mountain sides from Pennsylvania to Vermont where climatic conditions are paralleled by or even milder than the conditions in parts of Italy and Spain where some of the most engaging types of peasant house are found. The secret of suitability lies rather in analogies of site, exposure and vegetation. Italian and Spanish peasant and farmhouse types were in large measure born of the physical conditions of their surroundings, and where there is a reasonably close approximation to those conditions the types are suitable.

In adapting Italian and Spanish farmhouse types to the American small house, it is necessary, in some degree at least, to reverse the usual course of procedure and to work from the elevation to the plan, adjusting the main features of the interior scheme to the character of the outer shell, just as one has to do with much alteration work. This is not, of course, an absolute and unqualified demand, subordinating everything else to considerations of external and pictorial effect, but it does mean that the general conception must begin with the elevations and a mental picture of the type to be adapted, and that ingenuity in planning the interior will then get its direction from the mode of composition decided upon.

The greatest danger attending the adaptation of Italian and Spanish peasant types to the American small house lies in overdoing the effort and outdoing the prototype. We must beware of running to extremes and of becoming too much enamored of pictorial effects. The present type affords a splendid basis to work upon, so long as we are guided by reason; if we yield to rampant idealism, it can soon degenerate into an inconvenient piece of stage scenery. We ought not to complicate the result of our adaptations with too much nice and meticulous detail or by the introduction of too many "features." Whatever the temptation may be, it is a grave mistake to exalt some special or unusual decorative incident to undue prominence, making everything else play up to it. It kills that rugged simplicity, which is the essential and fundamental charm of the originals, and is very much like eating the icing and leaving the cake.

"Bungalows" in the Spanish and Italian Style

By REXFORD NEWCOMB

Professor of Architecture, University of Illinois

THE term "bungalow," which was imported from far-off "India's coral strand" to designate a more or less ephemeral type of small frame house constructed upon our Pacific coast, has, as time has progressed, been stretched to cover the various types of structure that, in good old Anglo-Saxon, are known by the simple name of "cottage." This popular use of the term, a use which, be it said, has not been generally adopted by the profession, has become very widespread, with the result that such terms as "Spanish bungalow" or "Italian bungalow" and indeed even "Spanish bungalow courts" are commonly used in popular architectural and garden parlance. This brief explanation of his concession to a popular usage the writer feels it is necessary to make at the outset, lest he be accused of dragging into formal company a term that, in some quarters at least, seems to mean "all things to all men" and has therefore little definiteness of meaning. Careless use has destroyed its utility.

But the small house, whether we call it a "cottage" or a "bungalow," is a type eminently necessary and therefore worthy of the architect's notice and artistic attention. The writer, who is not statistically inclined, is not familiar with the percentage of our population which lives in houses of seven rooms or less, but he is convinced that that percentage is very high, and thus it would seem that, if the art of the architect is to touch the great bulk of our people intimately, some very sane consideration and deliberate attention must be given to the small house problem. Here exists an opportunity for giving service.

Our country is a far-flung sisterhood of states, the historic backgrounds and ethnic relationships of which are, to say nothing of the wide geographical distribution, varying geological and topographical configurations and extreme ranges of climate, marvelously different one from another. As the architectural student leaves the valley of the Po and makes his way into the valley of the Arno in Italy, he is constantly confronted with a changing panorama of architectural expression that faithfully mirrors the changes in the territory over which it spreads itself. This kaleidoscopic change in architectural expression that accompanies geographical translation he delights in and holds to be just, logical and natural. Strange to say, however, when he returns home he seems to see no inconsistency in the fact that small houses in Pittsburgh look very much like small houses in Keokuk. This similarity of type and duplication of form has to the writer always seemed extremely inconsistent, and it appears more so as one studies the varying composition of our people and the diverging aspects of their environment.

In view of these tremendous differences it would seem that, instead of asking the native of Ohio to live in a house similar in significance and form to one reflective of life in Kansas, we should seek, even in our smallest architectural essay, to develop the "local color" of the region in which that essay finds itself. In other words, it would seem that, in the light of history, we are at cross purposes with natural and logical folk expression when we seek to force in any situation a form that is exotic or mean-



Adobe House, Walnut Park, Los Angeles
Victor Girard, Designer



Side Entrance



Window Grille

Details, Adobe House at Walnut Park, Los Angeles

ingless. Instead of leveling the architectural and artistic differences of our various sections, we should use every means to enhance the character and develop the phases in which the particular form in hand varies from all others. In so doing our great country would in time present a variety and wealth of architectural expression, the like of which the world has never seen, impossible in another land.

With these introductory remarks, it would seem that our sunny Mediterranean types, of which the Spanish and Italian are part and parcel, would appear exotic in many sections of our land. This is exactly true, and nothing could be more ridiculous

than a Spanish *hacienda* upon the bleak prairies of Iowa or Dakota. But there *are* many sections of our land—vast area in fact—where climatic affinities and historic background bespeak just such an architectural expression,—parts of the South and the West.

Those of us who gained our knowledge of American history from the typical grammar school textbooks of a third of a century ago know really very little concerning the peopling of our country outside the narrow area of the original states. That Florida, the Gulf coast, Louisiana and the lower Mississippi valley, to say nothing of Texas, New Mexico, Arizona, California and parts of Nevada,



House at Flintridge, Pasadena
Myron Hunt, Architect



Gable, House in Los Angeles



Patio, House at Walnut Park

Details of Two Small California Houses

Utah and Colorado, were at one time parts of the vast, world-flung domain of the Spanish kings is not well known or, if known, little remembered. To all this vast area architectural forms of Spanish origin or of related styles appear wonderfully adapted, and within recent years they have been sought out as inspiration by the more thoughtful practitioners in these states. This type of house, in every way so expressive of the setting, has, particularly in California and Florida, been so well adapted to modern American living conditions that it has well-nigh become the universal vernacular. Thus has California, as more recently has Florida, capitalized upon her

history, romance and lore, with the result that her architecture speaks more eloquently of her colorful past and glorious present than does any other phase of her artistic expression. What California has done, what Florida, Texas and New Mexico are doing, and what the architects of Pennsylvania have done for the staunch old Quaker and "Dutch" types of their state, a well informed and artistically inclined profession may do for its respective area.

Nor must one be misled into believing that Spanish types of similar form are adaptable to the whole of the just named extensive "Spanish area," for this is not true. California, with its wide range of



House of W. P. Warrington, Esq., Ojai, Calif.

Robert B. Stacy-Judd, Architect



HOUSE IN LOS ANGELES

HOUSE IN HOLLYWOOD, CALIF.
MEAD P. REQUA, ARCHITECT



GARDEN OF A HOUSE IN PASADENA
FLORENCE YOCH, LANDSCAPE ARCHITECT



A HOUSE IN THE OJAI VALLEY, CALIF.
ROBERT B. STACY-JUDD, ARCHITECT



House at Albuquerque, N. M.
E. C. Morgan, Architect

climate, its Mission history, its peculiar coast situation and its variety of flora, will accept forms that would not appear at all well in Santa Fe. Here the simplest of forms are enhanced by a wonderfully clear and vibrant atmosphere and the deep purple shadows induced by a vivid white sunshine, thus making unnecessary the elaborate forms and detail called for by less brilliantly lighted landscapes. This

fundamental simplicity of the architectural forms makes it possible to develop a delightfully varied small house architecture with the fewest of expedients. In this respect California has an artistic handicap over her less favored neighbors, and Californian architects have given us most delightful examples expressed with a restraint that is as frugal, straightforward, honest and craftsmanlike as the old



Interior, House at Santa Fe



Living Room at No. Hollywood, Calif.



House at No. Hollywood, Calif.

Robert B. Stacy-Judd, Architect

Missions, the simple forms of which to this day make such stunning pictures under California's bright sun.

The forms of Arizona, on the other hand, are allied more closely to the Sonoran types of northern Mexico and partake of a large amount of "desert" feeling. Here the early Spanish domestic types, unlike the Californian work which presents widely projecting roofs covered with vari-colored, hand-

made Spanish tiles, were flat roofed, and thus contrast with the churches which show low domes or tunnel vaults, features which, as a matter of fact, figure very little in the perspective. Again, the houses contrast markedly with the churches in that they are eminently plain in detail, while the churches, like San Xavier del Bac, a fine old Franciscan structure near Tucson, present *fachadas* more or less elabo-



Reception Room, Art Museum, Santa Fe



Interior, House of Carlos Vierra, Esq., Santa Fe



Patio, Estudillo House, "Old Town," San Diego

rately modeled and "polychromed." The "desert" quality of many Arizona situations would prompt the architect to seek in Algerian, Moroccan or other desert types inspiration for his work in that district.

At Santa Fe and in New Mexico generally we find an entirely different architectural expression. Here the *Conquistadors* found a sedentary Indian population which had already developed an expressive native architecture. This many-terraced type, fine examples of which are still to be seen at Taos,

Laguna, San Ildefonso and other places, generally passes under the name "*pueblo*." When the Spaniards employed these Indians to build structures with European plans and utilities of the materials and upon the lines of the native work, there resulted a new type half-Spanish, half-*pueblo*, the like of which has been nowhere else developed. This type, often spoken of as the work of "the Santa Fe school," and eminently expressive of the ethnic backgrounds and geological formation of New Mexico, has been much

used at Albuquerque, Santa Fe and elsewhere in the state, with the result that the manner now embraces, in addition to "bungalows," structures as varied as churches and theaters, hospitals, and museums, schools, the University of New Mexico, warehouses, power houses, business buildings and clubs. Thus, again, this region is capitalizing upon its heritage with fine artistic and historically interesting results.

The many divisions of this great Spanish domain present a variety of characteristics that must be taken



A Corner in a Patio



A Patio at Santa Barbara

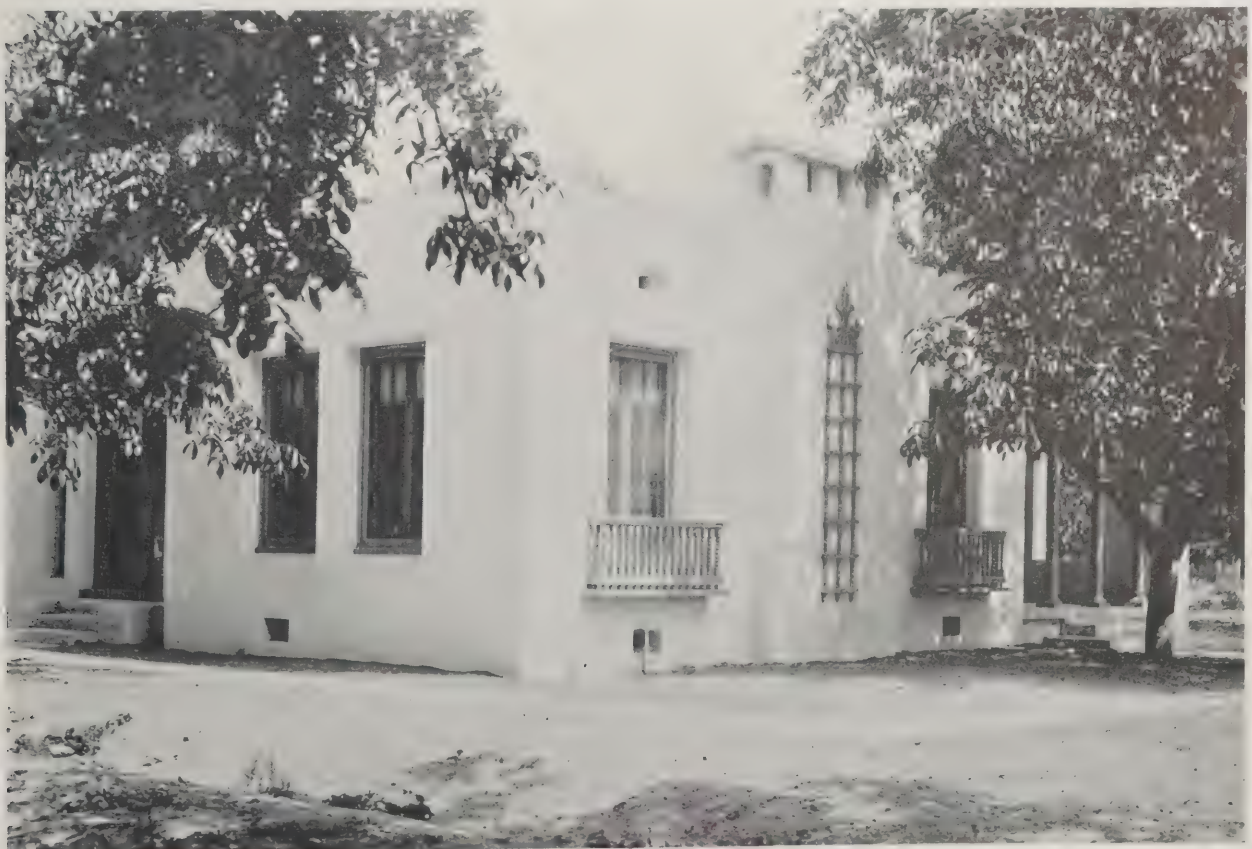
into consideration by the architect who proposes to design work in the Spanish manner. But, by relying upon the early local expression in each locality and by the judicious selection of forms from the varied parent styles of Spain and Mexico, the architect of our time may find a grammar sufficiently broad to mirror every phase of life as it expresses itself in these various states and climates.

The threads that weave themselves into that architectural fabric which we call "Spanish" go back in history a good many centuries. Based assuredly upon the round-arched, rhythmic forms of Roman Spain, this expression, as it came down through history, received the colorful Oriental threads of the north African Moor, the staunch monk's cloth of the Burgundian Cluniacs, reflected in tapestried picture the curved gables and pierced belfries of Holland, the delicate, decorative, Gothic lacework of France and Germany, and finished with the broad, golden fringe of the Italian Renaissance. This wonderfully varied warp and



Spanish Type House, Santa Barbara

woof, drawn from so many sources, received in Spain a color and spirit that indelibly stamped it with that quality that we have for centuries now called "Spanish." Imported into the New World with the coming of the *Hidalgos* to our shores, this work of old Spain was modified in Mexico by the influence of the Aztecs and other splendid barbaric peoples, giving us a style far more varied than it had been in the homeland. Especially was this true as regards the use of colorful ceramic tiles upon



Adobe House, Walnut Park, Los Angeles

Victor Girard, Designer

fachadas, vaults and domes. Extending northward and meeting special conditions in each of our American states to which it spread, this age-old Spanish-Mexican style was in each situation modified to give us the varied local expressions already enumerated. Thus the Spanish-Colonial, because of its peculiar parentage, its wide travels and its ranging climatic exposures, presents a variety of characteristics the like of which perhaps no modern style embraces.

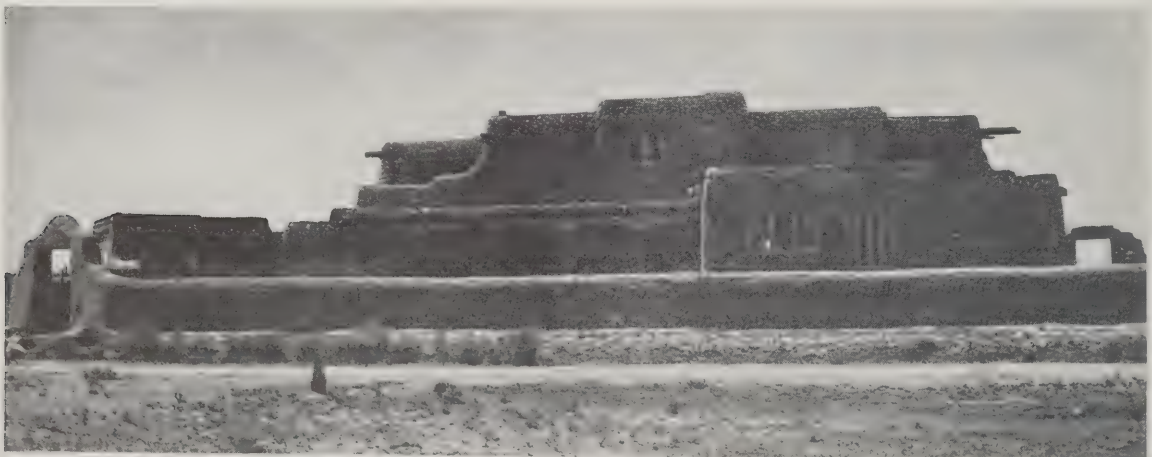
Most architects are familiar with the career in our country of that other sun-begotten style—the Italian Renaissance—so much used in the United States since the Exposition of 1893. Used first for monumental architecture and eventually as the vernacular for large residential work, particularly for country residences, it has given us little in the way of small house types, though in recent years there has been a tendency in this direction. But the Italians did not conquer or settle any part of our domain, and consequently the Italian has always appeared in the guise of a borrowed style, however beautifully it has, in some cases, been adapted to American conditions. Therefore it has had little part in influencing what forms the great body of our residential type—the highly important small house.

Called upon to do "Spanish" work, many of our men versed in the Italian unconsciously allowed the Italian to modify their less well understood Spanish forms, so that something that was neither Spanish nor Italian resulted. But this was only natural and, indeed, not as ridiculous as it might at first seem. As a matter of fact, *we* are neither Spaniards nor Italians, and the work in California, Florida, Arizona or Texas would contribute little were it simply archæological parrot phrases of these Old World works. By this curious accident of artistic history in our own land, again the Italian meets the Spanish, just as it did under the influence of the Renaissance of Old Spain several centuries earlier.

Recognizing the affinities between the Spanish, Italian and, indeed, even north African work, an affinity most certainly testified to by the varying elements of our own Spanish Colonial, there has been

a tendency further to mix the elements of these styles, and many of our architects, seeking a wider inspiration and virtuosity of expression than the various types of our Spanish Colonial afford, go back to the parent styles which, in times gone by, have so eloquently contributed to this cosmopolitan expression. Thus the fine old examples of Spain, of Italy, of north Africa, and in fact of most of the Mediterranean countries, are being sought out as inspiration for modern work in our Hispanic states. And this is as it should be, for, as there is much that the desert architecture of north Africa may contribute to the desert architecture of our arid southwest, so in each country there are many situations that artistically parallel American conditions. Florida, while she is Hispanic in history and geographical associations, is in some of her aspects distinctly Italian,—Venetian Italian. Thus one is not surprised to see along some lagoon in Florida a house, generally Spanish in feeling, with a doorway that recalls Murano and a balcony that suggests the "Mistress of the Adriatic" herself. Spanish, Italian, Moorish, Byzantine—Mediterranean types generally—instead of being kept archæologically segregated, are under this orchestral process merged into a new sun-loving style which, while eminently American in its plan and utilities, is Mediterranean in its origin and spirit.

At the center of a *patio*, which may be simply graveled, flagged, or brick-paved, there is usually a fountain. This may be anything from a simple, low bird bath to an octagonal, tile-plated basin or an Italian terraced fountain. In any case potted geraniums and other plants contribute their note of joyous color. Plantings of banana, oleander and other semi-tropical or tropical plants make green splotches against the broad areas of delicately tinted stucco. Along with these features go the splash of vari-colored awnings, the sharp staccato notes of the wooden or wrought iron grilles, heavy wooden shutters of brilliant colors, deep revealed windows, door heads of the utmost variety of shapes, and the concentration of elaborate ornament around openings,—especially around doorways and important windows.



Spanish-Pueblo Type House of Carlos Vierra, Esq., Santa Fe
Carlos Vierra, Architect

The Architects' Small House Service Bureau

By ROBERT T. JONES, *Technical Director*

THE Small House Service Bureau began as a professional experiment. Its purpose was to find out, if possible, whether there was any way by which the architect could serve the small house builder; whether there was any means at his disposal by which he might bring to the enormously important field of small home building the benefit of his experience and training. It was thought that if the experiment should prove successful it would not only result in an improvement in the character of small houses but that it might also help to establish the truth of the essential axiom that the architect is an economic necessity. Today, those who have been in close touch with the results of this experiment feel a sense of keen satisfaction in realizing that their vision is being justified. It has been proved that architects by concerted effort can serve the small home builder, can improve taste in small houses, and in so doing advance the whole cause of architecture in our country. This is to be a brief account of how the experiment has been conducted, and a presentation of some few results.

Six years ago a group of architects in Minnesota gathered to discuss problems of housing. It will be recalled that at that time, just after the war, there was a housing shortage. Preparations were being made to erect what seemed to be an infinite number of small homes. With the forces then in control of small house design, these preparations were looked upon as likely to result in nothing short of an architectural calamity. The architects in the northwest were appalled at the vicious architecture of small houses in that region. They saw that the prevailing architecture of the small home was being determined to a large extent in the service rooms of lumber dealers, by contractors or by carpenters. The architect, under a situation for which perhaps he was not responsible, had allowed himself to be eliminated. Building material dealers had evolved the custom of supplying blue prints free with the sale of a bill of goods; contractors anxious to secure clients were supplying free plans. Needless to say, the plans thus supplied not only did not contemplate the securing of good architecture, but they were extremely meager and incomplete. Often they were not accompanied by real specifications. The contractor was not bound specifically to the performance of any kind of delivery as to material, plan or design. Houses built from these plans rarely if ever had architectural qualities, nor indeed could they have.

The underlying cause of this situation was known by the Minnesota group. It is familiar to every architect. Briefly, the small house builder did not employ an architect because he thought the architect charged too much—if indeed, he thought about it at all. The small home builder did not understand that

a fee of \$300 for the building of a \$6,000 house really meant the addition of quality to his house. He did not know that the architect by his experience and skill might easily save for him the whole amount of that fee. It was only clear to him that \$300 would go a long way toward buying a furnace or enclosing a sun porch. It was difficult at that time, and it is still difficult, in the face of the free plans that were offered and are still offered, to make it apparent to the home builder that the \$300 which an architect might charge is inconsequential in comparison with the assurance it gives that an expenditure of \$6,000 for a home will be adequately safeguarded. It was still more difficult for him to comprehend that through the payment of this fee he gets a house of better construction, of better appearance, with a more commodious plan, and consequently one that may command a higher resale value. The average home builder did not distinguish between qualities of plans drawn by architects and those prepared by others, excepting perhaps in this way—that one set cost him \$300; the other cost him nothing. One set is architectural; the other, to quote a certain real estate operator, is “practical.” Every architect is also familiar with the fact that the ordinary fee that he may charge for his necessary services in the building of a small home nets him no profit,—in fact, it may show a loss, as it not infrequently does.

Thus one has the picture:—the small home builder believing the cost of architectural service not necessary and beyond his means, and the architect convinced that the cost of giving such service is too great for him to bear. But the elimination of the architect from the field of small home building was having far more serious consequences than the erection of flimsy, unsightly small houses about the country. People were becoming accustomed to lower standards of building of all kinds. There were evidences that the architect, unknown or unwanted by the small home builder, was being dispensed with more and more in connection with larger and more important buildings, a condition disastrous to architecture.

In the minds of the Minnesota architects gathered to discuss this problem the remedy seemed to lie in perfecting the very service which they had feared—the stock plan service. They saw that if the home builder could not afford to employ an individual architect to prepare a complete service for him and to supervise his building, they must provide an architectural service of some other nature that could be made available to him at a price he could afford. They saw that if the drawings and specifications which an architect might prepare for one client could be used by a number with approximately the same requirements and tastes, the cost of preparing the original service might be distributed among many

home builders. There was no thought in the mind of anyone that a stock plan service, however well administered, could really take the place of the service an individual architect is equipped to give, but it would be a step in the right direction. It might at least give the home builder an accurate set of plans and specifications, one that could be made the basis of a proper contract, and which, with an honest and intelligent contractor, would be a distinct advantage to the home builder. It was at least worth trying.

Obviously the fault with such a service lay in the fact that it did not involve the presence of an architect during building operations, and made the contractor essentially the judge of his own work. An effort must be made to overcome this. It was thought that with a set of good drawings and specifications in the hands of the owner he could be shown the advantage of having an architect directly in his employ to help him select materials, let contracts and, supervise construction. Much must be done to educate him. Much might be done, but a beginning has been made.

The merits of this solution were so apparent to the group of Minnesota architects that they set about to supply means to put it into execution. They incorporated under the name of "The Architects' Small House Service Bureau of Minnesota," and then, in order to put their company on a basis from which the element of profit was as nearly as possible eliminated, they limited possible dividends on their capital investment to 8 per cent a year. Then each of them contributed to the general program a sketch for a small house that had proved successful. From these were selected a group. Working drawings were made, and the designs were given some local publicity. The idea had been developed to only a limited extent when it began to receive favorable notice in newspapers and magazines, and the group of architects became known as "the \$8 a year architects."

The Minnesota architects then financed the production of more than a hundred sets of working drawings, specifications and quantity surveys, and through the coöperation of a national lumber manufacturer a book of the designs was published. The publication of this book created a furor among those interested in home building. There was praise enough to satisfy almost any enterprise, but there was also so great a volume of objection coming from lumber dealers and contractors, from small home builders whom it was hoped to serve, and from architects, as to give the Small House Bureau considerable food for thought as the criticism accumulated.

The reasons for the objections on the part of the material dealers and contractors will be readily apparent. The real disappointment, however, lay in the protest of a number of architects. Some of these felt that the contemplated stock plan program would tend toward the standardization of small house design to such an extent that variety in home building would be lost. There were others who felt that the policy of the Small House Bureau was the first step in a program of standardizing every form of

architecture, the ultimate result of which would mean stock designs for larger homes, for schools, for jails, for court houses, for state capitols. Some architects saw, or thought they saw, their means of livelihood fading. Not a few objected because they thought that many of the designs did not represent much advance, if any, over what they were intended to displace, and that no improvement could be expected.

Then the Bureau set about to build a substantial foundation upon which to erect its service; to improve its designs; to enlist the approval of architects, of dealers, and of the home builders. Its members saw that it would be necessary to interest all the architects in the country in its program. They felt that if architects generally realized the imminent danger to their profession through the prolific construction of inferior houses, at least some of their objections would seem of small consequence. Other objections might be overcome entirely. But first of all the corporation must be reorganized, so that it would include members from every section of the country, for it was seen that climatic and economic conditions of different sections were such as to make it advisable for each section to draw upon the powers of its own architects. A new organization was then formed entitled "The Architects' Small House Service Bureau of the United States." Under it were provided 13 divisions. These divisions were made somewhat arbitrarily, but the states were grouped together around definite marketing centers, and climatic variations were recognized. There was a division for New England, another for California, a third for Florida, Georgia and Alabama, a fourth for the North Pacific states, and so on.

In order to limit any possibility of any one firm's or person's exercising undue control, voting power was limited to an issue of common stock, of which but one share might be held by any one person or firm of architects. The par value of this stock was fixed at \$100 a share. There was also an issue of special stock, similar in all respects to the common issue, excepting that it had no voting power. This second form of stock made possible the gathering of sufficient capital to finance production and operation. This issue was also limited to architects or firms of architects. Contrary to an idea that has gained some credence, it may not be sold by the Bureau to those outside the profession. Individual holders may dispose of this stock as they please—within their property rights. Very little of it has been transferred. The common or voting stock may be held only by architects, and it is not transferable. Each of the regional bureaus is organized in this way. There is no specific obligation to buy the special stock. That is a matter for each Bureau to decide as best suits its purpose. However, each architect holding a share of common stock in a regional Bureau is obliged to assume one share of special stock in the national corporation, "The Architects' Small House Service Bureau of the United States," the par value of which is \$10, a value which is, of course, entirely nominal.

Perhaps it should be said that the national corporation does not produce any of the technical service, the plans, specifications, or quantity surveys, nor does it sell them. Its sole purpose is to direct the policies of the regional Bureaus and to maintain a national program of publicity. The regional Bureaus are the producing and selling agencies. They create the designs,—which are limited as to size to a maximum of six principal rooms,—sell the service, maintain contacts with home builders and clients.

The American Institute of Architects put its seal of approval on this scheme and was given control of the national Bureau by the insertion of a clause in the by-laws whereby the Institute is given the right to appoint a majority to the board of directors. This board is made up of one director from each regional Bureau, and then an equal number, plus one, appointed by the Institute. The Institute, however, is no more responsible for the designs, plans, specifications, or other service of the Bureau than it is for the service of its individual members. It also disclaims responsibility for any specific acts of the Bureau in the development of its operations. It approves the idea only, and, as already said, controls the general policies through appointing a majority to the board of directors. The United States Department of Commerce, through Mr. Hoover, also endorsed the Bureau movement and gave its approval.

During the six years that have elapsed since the formation of the United States Bureau, the scheme has progressed to a point where there are now established eight divisions, each operating in its own sphere. Each of these is financed separately. Each maintains a central office, and some have established branch offices throughout their respective territories. Each has a group of plans designed by its members or has in course of production such a group of designs. All are promoted nationally by the United States Bureau by publicity intended for them all.

After the organization was effected it remained for the Bureau to produce designs that would sell readily,—and yet not quite that, but to produce designs that would measure up to high standards even though their distribution must be an arduous and long-drawn-out process. It was hoped through a campaign of education to raise the requirements of home builders to a higher plane, so that Bureau designs would find a more ready acceptance, and so eventually to make a market for the plans, or else, better still, to stimulate home builders to employ architects, which is of course the ultimate aim.

One must understand the difficult situation with which the Bureau was faced in attempting such a program. Practically all the available capital had been put into plans and management, and there were no funds remaining, either for new studies of designs or for promotion. The Bureau realized that its future depended in a large measure on how quickly and effectively it could tell its story to the public. It desperately needed publicity and advertising, but it had no money to pay for them. The Bureau had

been fortunate enough at the very beginning of its existence to secure the assistance of a man highly skilled in the arts of publicity,—Maurice I. Flagg. Mr. Flagg was able to show the editors of newspapers and magazines the essential nature of the Small House Service Bureau as an institution in the service of the public, and almost instantly he succeeded in getting them to devote large areas of their space to the telling of the work of the Bureau. A special newspaper editorial feature was evolved and wisely distributed. It gathered strength quickly.

Today the Small House Bureau releases to many of the great metropolitan newspapers 60 inches of type matter once every week. The influence of these newspapers is nation-wide. The combined circulation averages more than five million per week. The Bureau is paid a modest amount for this service. Each week in every one of these papers there is shown the design of a small house, accompanied by an explanation of its qualities. There is also published a short technical item in a popular vein, inspired by such subjects as financing, proper uses of materials, ways in which to reduce costs, methods of choosing a lot, and so on. These items are edited purposely to create a demand for the use of better materials and workmanship. Emphasis is put upon the essential elements of architecture, good room arrangement, sound construction, fine appearance, and how necessary it is to have an architect on every building—no matter how small. So closely has the Bureau aligned itself to the interests of architecture that when it tells about itself it is obliged to tell also of the architect. Then, to accompany the designs and technical stories, the Bureau devised a column of questions and answers, not unlike the columns devoted to public health that have been run in so many newspapers. Every architect will envision the potentialities of this column. The answers are constructive. They are carefully devised to improve building and to encourage the use of materials that an architect would rely upon. The column is a kind of an open forum, to which the home builder may address questions that are troubling him.

These designs, stories and questions and answers go out day after day, week after week, year after year, pounding away at one idea—the improvement of conditions for the home builder, the necessity of employing an architect. After a year's experience of this kind, it occurred to the Bureau that the newspapers could utilize books containing reprints of the editorial matter they were publishing, and immediately there was prepared such a book under the resounding title, "Help for the Man Who Wants to Build." For three successive years a book of this kind has been published and circulated by the newspapers. More than 115,000 copies have been distributed. On every page will be found the imprint of the American Institute of Architects. On almost every page there will be found something pertaining to the architect and how he is best able to serve. On every page has been written something in behalf of

the cause of architecture and its service to the public.

To complete this brief survey of the principal items of Bureau publicity, it is necessary to mention one of its most important publications, *The Small Home*. This little magazine is devoted to the purpose of making known the work of the architect. It illustrates houses built from Bureau designs. It also contains information about materials and methods of building, about architectural design and its worth. It is probably the only publication that limits its field strictly to small houses of from three to six rooms. Illustrations are of Bureau houses only. There has been some criticism of it on the score of its not having the proper tone for an architectural magazine, especially one under the control of the Institute; but is *not* an architectural magazine. It is edited purely for the small home builder, and is designed for his encouragement and education. It is not directed to the architect, but to the home builder, whose needs are very great and whose capacity to understand the function of the architect has not yet been fully developed. Its aim is exclusively educational.

There remains only to tell a little about the designs of the Bureau. The designs shown here in the pages of *THE FORUM* give some evidence of the particular quality for which the Bureau has been striving, but they give no indication of the expensive and laborious research that has been involved. The Bureau does not conceive of its problem as one to be solved through the production of individualistic types, however delightful to the architectural eye. The characteristics of a stock plan service are such that the designs must conform to the requirements of the average family. To those who, happily, can afford homes of greater individuality, the skill of the architect remains the only source of adequate service.

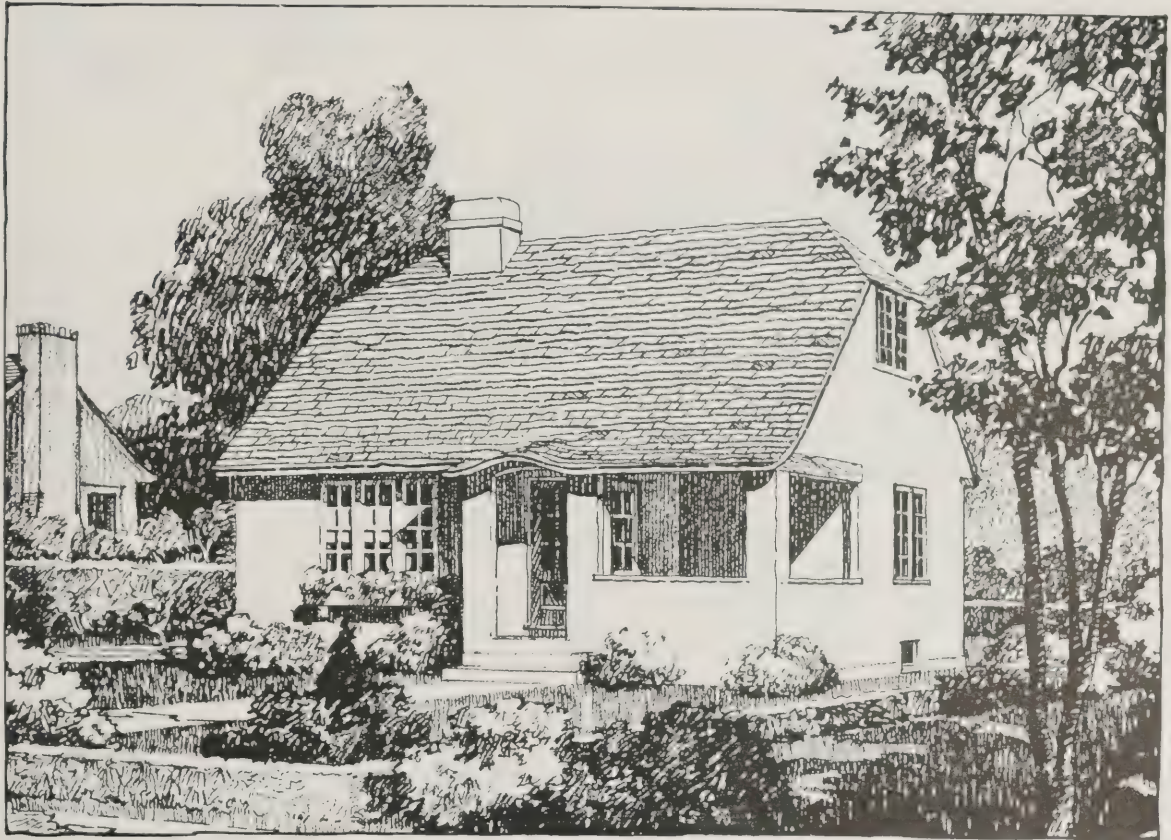
The Bureau has endeavored also to eliminate from its service all those types which the architect looks upon as ephemeral. The Bureau could no doubt sell a vastly larger number of working drawings if they

were designed to meet popular taste, but there is no tendency on its part to waste its opportunity to advance the cause of the architect for the sake of making money. The houses are intended to be sound from every architectural point of view,—not necessarily masterpieces of design. They are generally of types most economical to build. The houses illustrated in these pages are thus not intended to represent absolute architecture. The Bureau entertains no illusions as to their real worth.

Perhaps a final word as to methods of obtaining the designs may not be amiss. The first group was prepared by the Northwestern Division, at an expense to its members of about \$40,000. Other divisions have also invested considerable sums in production. Many of the designs are obtained through competition, and the authors compensated by royalties. Some of the more important magazines have made use of Bureau designs prepared especially for first release in their pages, and they have paid the costs of production. A number of designs have been prepared through the financial assistance of certain national manufacturers. From a material point of view, some of the organizations of the Bureau have prospered,—have made a little profit. Others have not done so well, though none have assumed large losses. It is true also that, considering the size and extent of the Bureau and the multiplicity of its work, the amount of capital invested in the enterprise has been remarkably and ridiculously small. The influence of the Bureau indeed has been curtailed to a large extent by the limitations of the capital with which it has to work, and by the small number of those upon whom it can call for assistance; but there is, none the less, a record of accomplishment. It seems not unfair to say that the Bureau is making some impression on the home builders of America. When the time comes, as it must, that the name of the architect becomes a household word, the work of the Bureau will have been done, its function fulfilled.



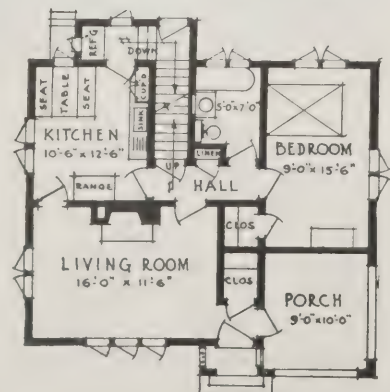
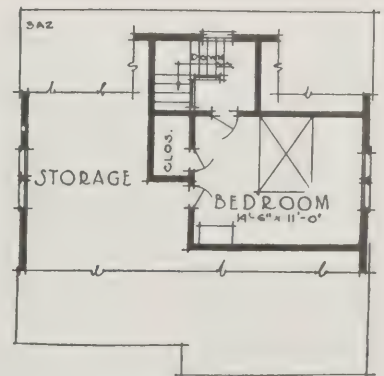
Small House Built from Plans Supplied by The Architects' Small House Service Bureau

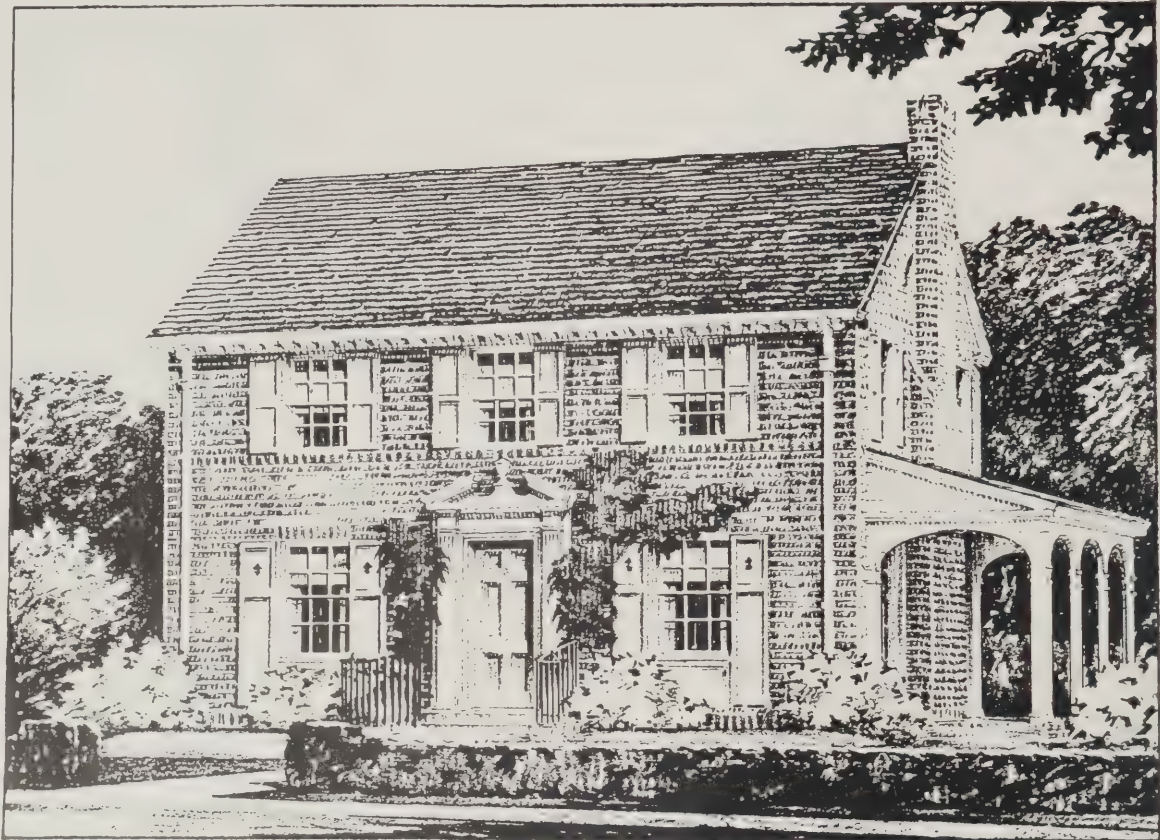


ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN No. 3 A2



CONTAINING approximately 16,000 cubic feet, this small house, having asbestos shingled roof and rough stucco on wire lathing for the exterior walls, is an excellent example of a carefully designed, small, story-and-a-half house. The first floor contains a living room and kitchen, bedroom and bath, with a stairway leading up to the second floor, where an additional bedroom and a large storeroom are located. The illustration of the house actually built shows the porch glassed in.

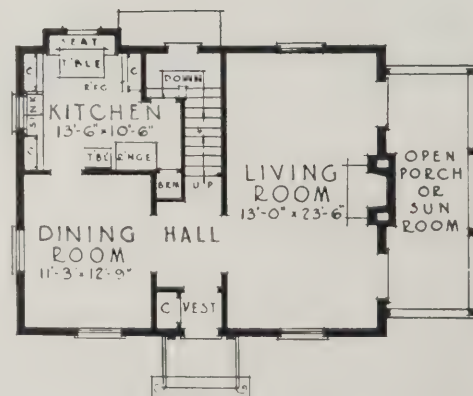
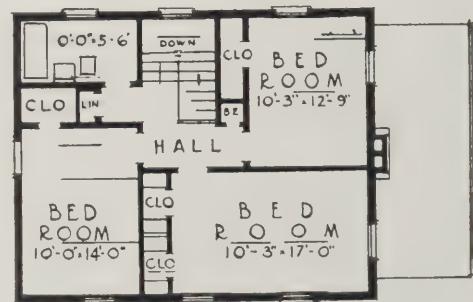




ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN NO. 6A72

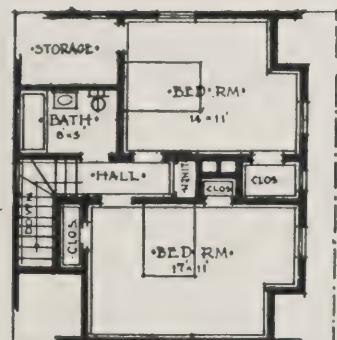


ONE illustration upon this page shows a simple brick Colonial house actually completed from plan No. 6A72. The omission of paneled shutters and the use of a lighter and less expensive type of porch construction detract considerably from the charm of the house as indicated in the pencil sketch. Such changes and omissions in the design, which are beyond the control of the Architects' Small House Service Bureau, are often, unfortunately, very detrimental to the artistic or architectural character of a building.





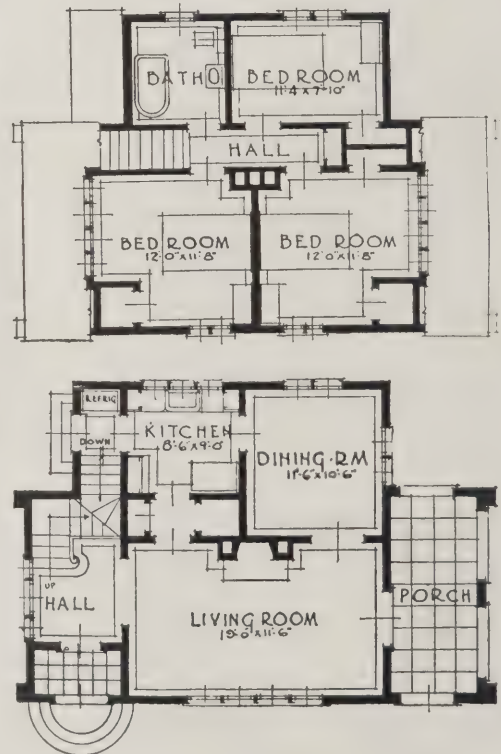
ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN No. 5C10

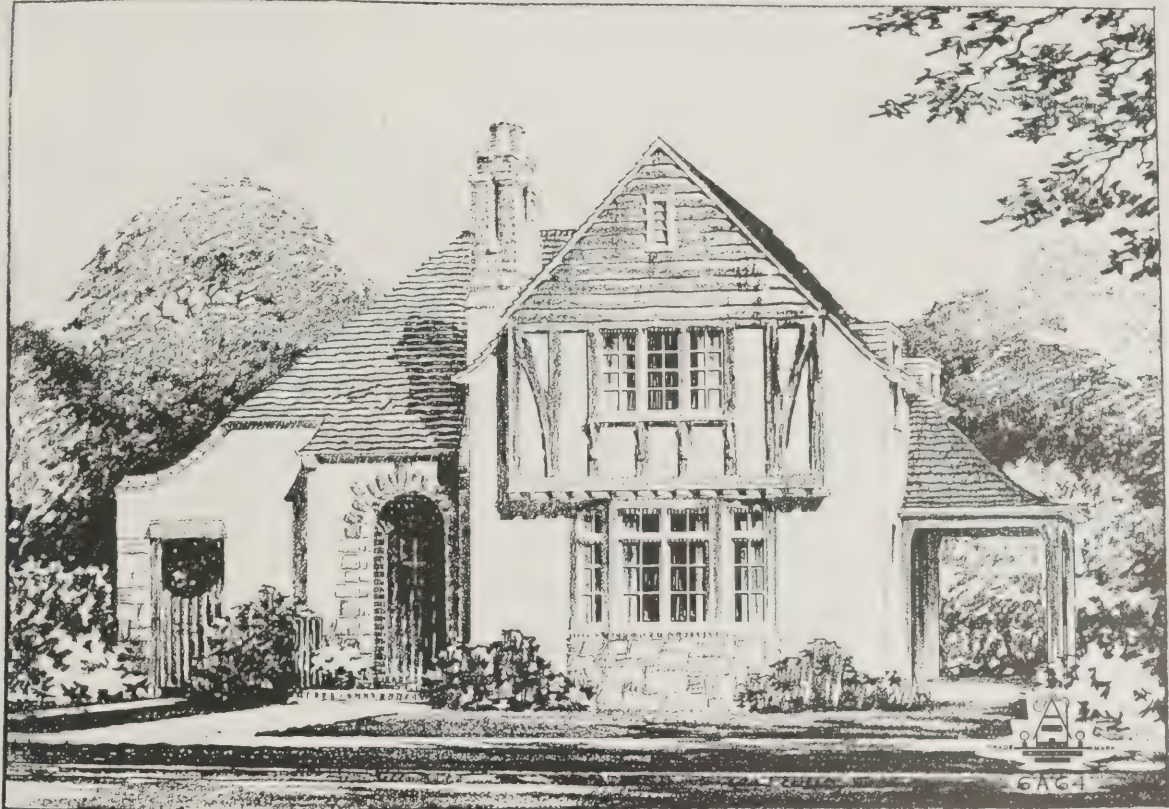


ALTHOUGH this house, built from plan No. 5C10, in general outline closely follows the original sketch, the change in the size and proportions of the window openings, the omission of blinds and the increase in the height of the house very nearly deprive the finished building of the charm possessed by the original design. This is an excellent example of what subtlety lies in correct scale and proportion, any variation from which causes a definite loss in charm. Cubic contents of this house, 16,500 feet.

ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN No. 6B₄

IN this illustration a view is shown of a small stucco-finished house containing 16,850 cubic feet, which quite closely follows the original sketch. The omission of the window box under the long living room window and the added height of the dormer roof are the two most conspicuous deviations from the original design. The plan of this house is particularly practical, as the front door and stair hall are at one side instead of at the center, making it possible to place the living room at the front of the house, the dining room at the rear.





ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN NO. 6A64



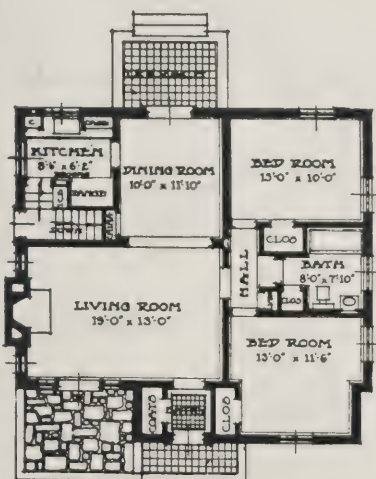
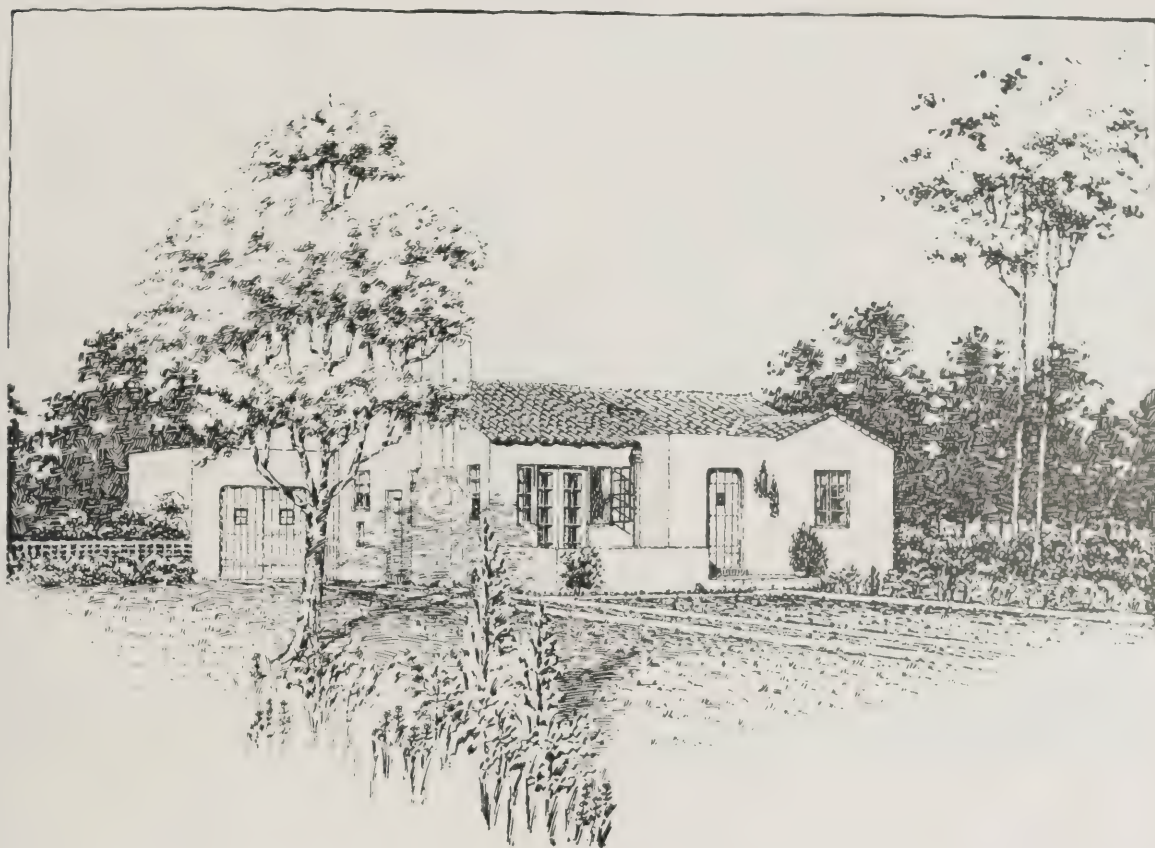
THE Architects' Small House Service Bureau Plan No. 6A64 shows an interesting little cottage in the English style. The illustration of the finished house shows how successfully, carefully and conscientiously the original design was followed, the only apparent deviation being in the increased width of the service yard gate at the left of the building. Stucco on wire lathing, native stone, brick, half-timber and siding are successfully used in this small English house, which contains approximately 27,500 cubic feet.



BRICK instead of stucco is used for the exterior walls of this one-story, small house which contains approximately 22,000 cubic feet. Except for this change in exterior materials, the house as built follows very closely the original sketch. Although permissible, this substitution of brick for stucco detracts somewhat from the stylistic quality of the building. To preserve the Spanish or "Mediterranean" feeling of the original design, the use of stucco is preferable.



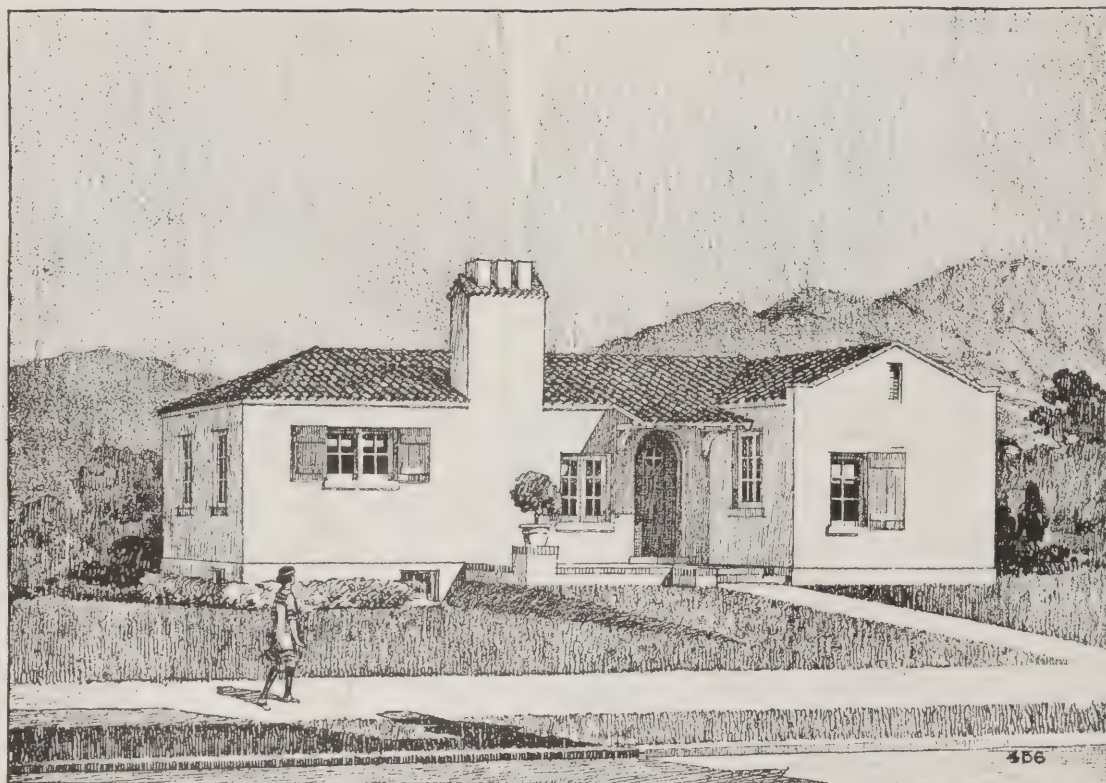
ARCHITECTS' SMALL
HOUSE SERVICE
BUREAU PLAN NO. 5B20



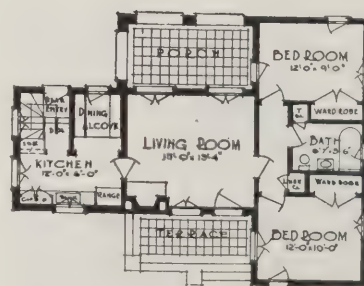
ARCHITECTS' SMALL
HOUSE SERVICE BUREAU
PLAN No. 5B31

PLAN No. 5B31 shows a compact plan all on one floor; a "bungalow in the Spanish style" is the description which many will undoubtedly give. Although the original design has apparently been quite closely followed in the completed building, the fact that the original sketch shows a house located on level ground with a garage at one end, gives the impression that the two houses are not so closely alike. Constructed of hollow tile covered with stucco, this small house contains approximately 17,500 cubic feet, a complete house in small space.





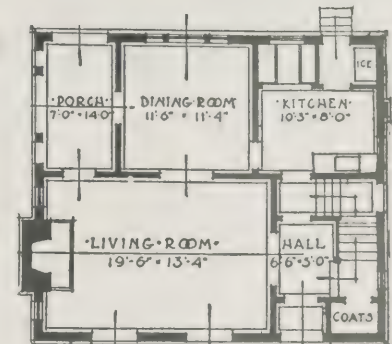
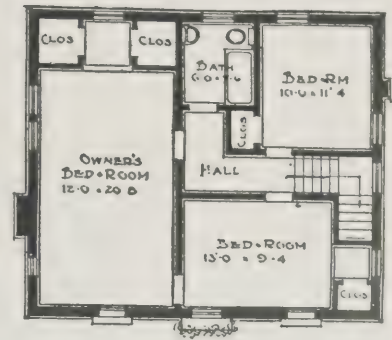
A LOW, one-story house, designed in a simple adaptation of the Spanish style, is shown in this illustration. In this instance, the completed house in its picturesque setting, with the peaks of the Rockies rising above the distant hilltop, will illustrate the adaptability and appropriateness of these Architects' Small House Service Bureau designs to the localities for which they are intended. Containing approximately 13,700 cubic feet, this one-story house is excellently planned, with a living room in the center, opening on both the front and back.



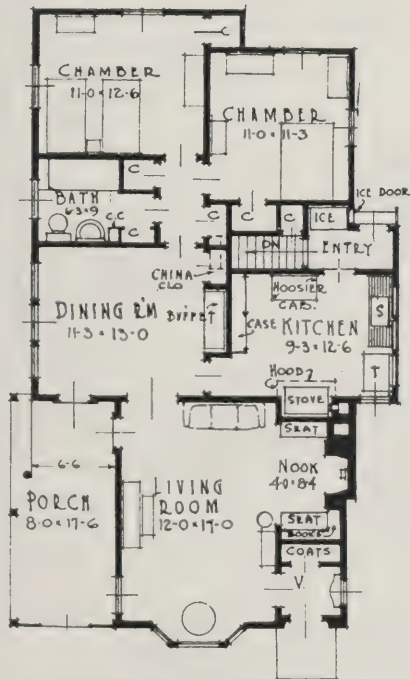
ARCHITECTS' SMALL
HOUSE SERVICE BUREAU
PLAN No. 4B6



ALTHOUGH almost square in plan and box-like in elevation, this small two-story brick house has considerable charm and individuality on account of the carefully placed and well planned window and door openings. It is a pity that the house as built did not more closely follow the details of the house as originally designed. The exterior walls are brick veneer on frame construction. Cubic footage is approximately 22,500.

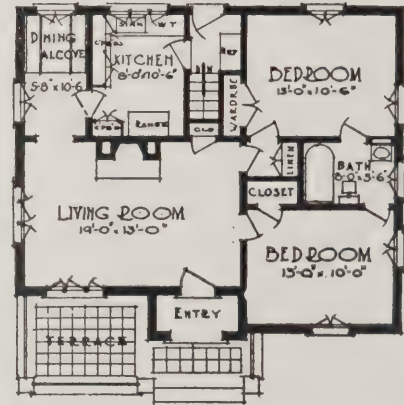
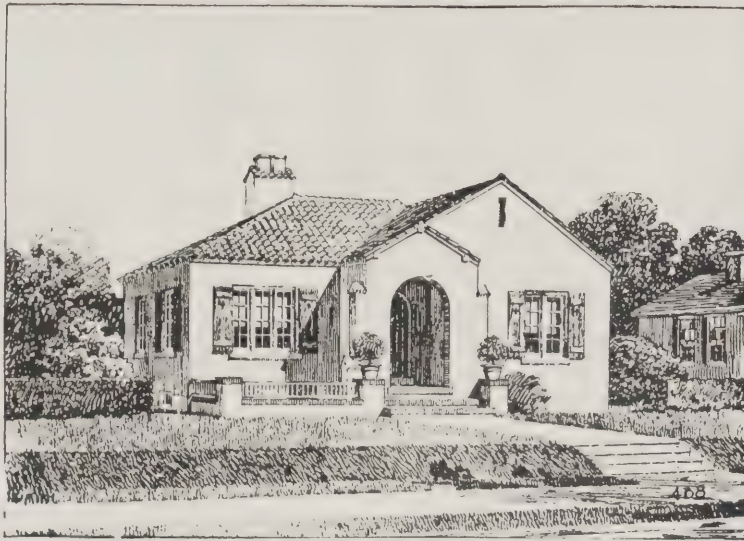


ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN No. 6D₂



A SMALL bay window, simple Colonial entrance door, and gray stained shingles give a quaint, old fashioned appearance to this five-room bungalow which contains approximately 18,800 cubic feet. The plan is unusually well arranged, having a small front entry leading into the living room, which in turn, together with the dining room, opens onto a covered porch. The single chimney is so located as to serve for both living room and kitchen. Two bedrooms and bath are back of the dining room.

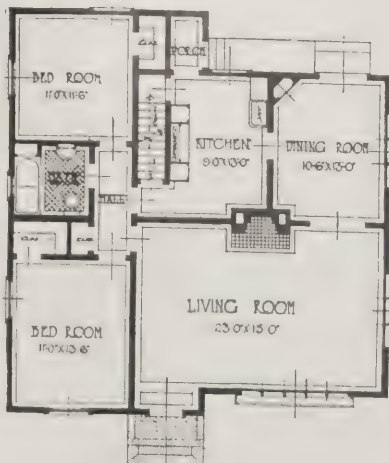
ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN No. 5D₂₅



STUCCO on hollow tile is used for the exterior walls of this small bungalow, the cubic footage of which is approximately 17,100. The plan is convenient, compact and well arranged. The front door opens directly into the living room, behind which are a dining alcove and kitchen. Two bedrooms and a bath at the right of the living room complete the plan.

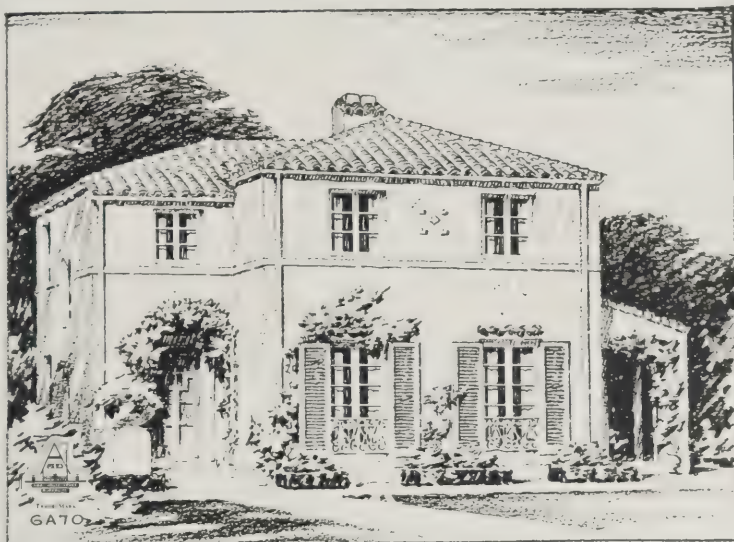


ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN NO. 4B8

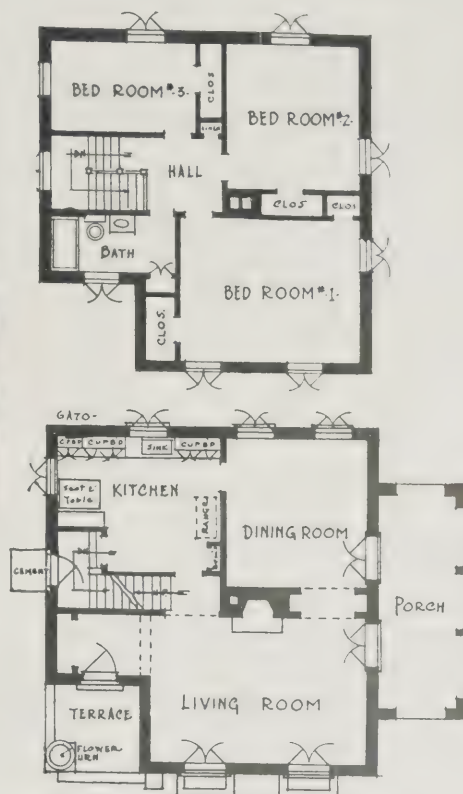


WHITE painted shingles or siding, small window panes and a Colonial hood over the front door give individuality and character to this small five-room bungalow, which contains approximately 23,500 cubic feet. Bricks for the entrance steps and the chimney add color and variety to the design.

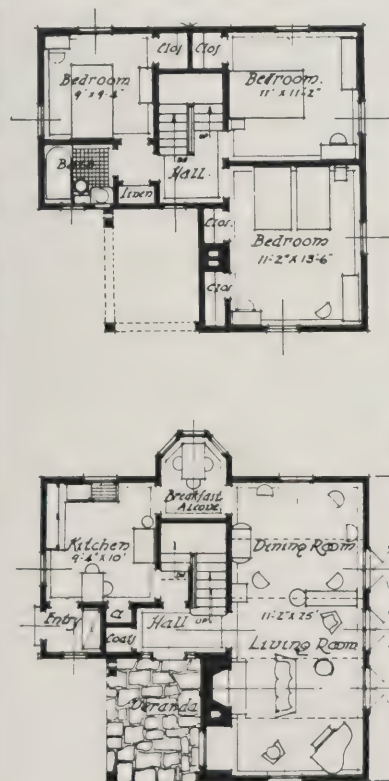
ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN NO. 5E1



CONTAINING approximately 21,000 cubic feet, this house suggests in design the type of villa found at the seashore resorts of southern France. Casement doors, stucco finish on terra cotta blocks, and a Spanish tile roof are the details which give an unusual stylistic character to this small building.

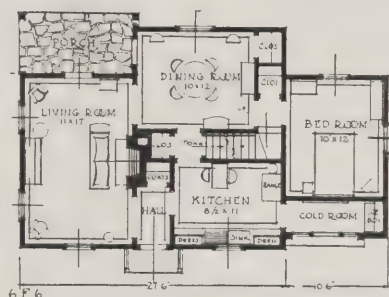
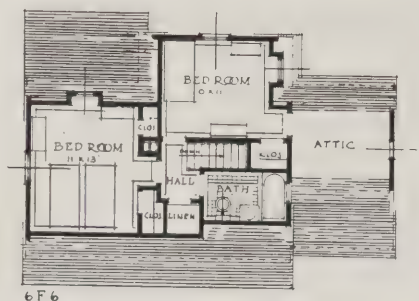


ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN NO. 6A70



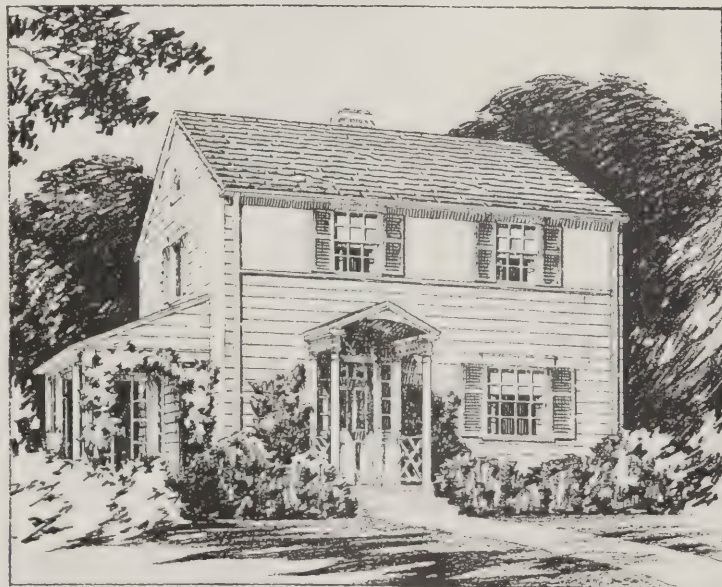
THE dignity and scale of this house, containing approximately 20,600 cubic feet, suggest in style the later colonial period and gives an impression of being of greater size than in reality it is. One long room for living and dining purposes adds to the spaciousness.

ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN NO. 6F9



DU E to the use of dormers at the rear of this cottage, containing approximately 17,000 cubic feet, it is possible to get two bedrooms and a bath on the second floor. A remarkable degree of the spirit of the olden days has here been caught.

ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN No. 6F6



THE use of a string course and stucco panels for the second story gives originality and charm to the design of this house, containing approximately 17,500 cubic feet. The entrance door and porch emphasize the Colonial feeling. In plan the entrance and living porches are interchangeable.

ARCHITECTS' SMALL HOUSE SERVICE BUREAU PLAN No. 4A36

THE
ARCHITECTURAL
FORUM



APRIL
1926



What is Service?

You may know the answer so far as you are concerned. So far as we are concerned we know what the right answer is; and that's what we do.

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"OAKLEY," ST. FRANCISVILLE, LOUISIANA
FROM A PENCIL SKETCH BY WILLIAM P. SPRATLING

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Old Plantation Architecture in Louisiana

PART I. THE EARLY PERIOD, AND HOUSES OF THE BAYOU COUNTRY

Text and Sketches by WILLIAM P. SPRATLING, Professor of Architecture, Tulane University

A MAP of the lower parts of the state of Louisiana would show to one who is not familiar with the section an almost unintelligible maze of strangely wandering waterways and curiously scattered shapes of land. The Mississippi River is seemingly ever-present, flowing southward from Natchez and Vicksburg in the north, down by St. Francisville and Baton Rouge, through an old and particularly rich stretch of country something over one hundred miles in length, to New Orleans and thence to the Gulf. The last part (the "Lower Coast"), is through a very low and sparsely settled country;—little settled due to the terrible floods and storms that have from time to time devastated the region. From the east bank of the river, inland above New Orleans, the land seems to rise slightly and become firmer and a little rolling in the direction of Mississippi. Above Baton Rouge this tendency to become hilly is decidedly and almost suddenly apparent, and around St. Francisville, some 30 odd miles above Baton Rouge, the little hills of rich red earth take on an almost fantastic quality. These bluffs, for the most part heavily wooded, manifest themselves boldly on one side of the river, while directly on the other (the Pointe Coupee Parish side) is to be found the characteristic low land of the bayou country.

The bayou country, which includes the lower parishes of the state, and in particular those of Evangeline, Iberville, Ascension and St. Landry, is most certainly unique. Here are to be found geographical and building conditions that are peculiar to no other section of the United States. The country to which it is most nearly similar in this respect would be Holland. However, for us the chief interest lies not so much in these physical conditions as in the actual historical and architectural aspects. The early colonization of Louisiana,—the French settlers with their language and customs, the accumulation of French traditions, the effects of the Spanish regime, the many great historical happenings, and the names which have figured in those happenings,—all this forms a background of color

that is undeniably rich as well as highly picturesque.

In an article of this kind the great difference remarkable between the homes of the southern or bayou-marked portion of the state and the development that took place farther north forms the most logical mode of division. The reasons for these marked differences have most natural foundations. It seems that only a short time after the French and Spanish had invested New Orleans and the lower territory, there was a migration to Louisiana of settlers from South Carolina. The English-bred people, traveling overland westward and southward, settled in two principal communities,—the largest group at St. Francisville on the Mississippi, and the other near Natchitoches in the northwestern part of the state. We have, then, three distinct sources of traditions in Louisiana. Predominant, of course, is the French; tempering this is the Spanish influence; and then, in a sphere of its own, the English, expressing in a small way all the ideals and niceties of Georgian tradition to be found along the Atlantic seaboard, and particularly in the more southern states.

In attempting to obtain accurate historical data concerning the examples of note of these pioneer days, one finds such things as dates a little elusive. New Orleans itself was founded about 1718, and there are houses still extant that date back to the coming of the first French colonists. In New Orleans the great fire of 1788 and the resultant building activity of the following years may be said to mark the end of the early period, and probably that date, roughly speaking, will serve as well for the plantations whose prosperity was so interdependent with that of the city. The earliest plantations undoubtedly obtained much of their inspiration and charm from the influence of such houses as that made famous in "Madame John's Legacy," on Dumaine Street, in New Orleans. In and around the city are to be found many fine old houses of this type. Bayou St. John, the landing place of Bienville, founder of the city, contains several examples of early plantation architecture, notable among them the fine and stately Schertz residence.



SARPY PLANTATION, ON THE EAST BANK OF THE MISSISSIPPI



"OAK ALLEY," ON THE WEST BANK OF THE MISSISSIPPI



"Three Oaks Plantation," Chalmette

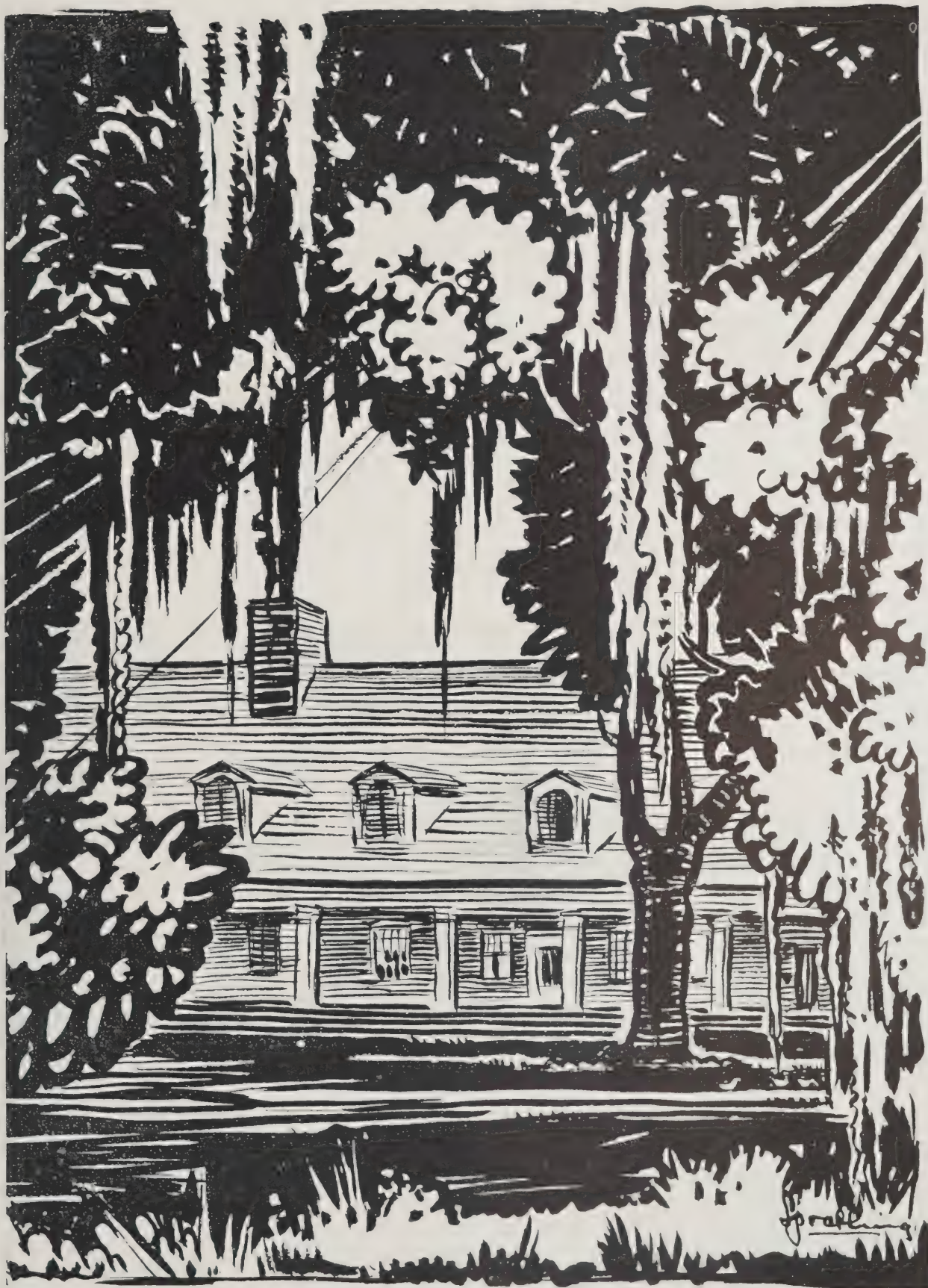
Several miles above New Orleans and on the east bank of the Mississippi, we find the magnificent old Sarpy house. In this splendid example will be found expressed all the best traits and the most characteristic details of that early type executed on a very extensive scale. Here are to be found the brick and stucco columns on the first floor, with that so graceful and so characteristic detail, the wooden turned colonnettes, on the second. The openings are French, and the central doors with their delicate fanlights carry one back to the fine old residences of New Orleans. The dormers are also notable. The finest thing about the house is the grace and lightness which marks the whole, and which has been carried out in such excellent spirit in the proportioning of the parts. Today the sight of the

old house is a little bit saddening, crowded as it is on the front with the levee, and in a state of obvious decay, and menaced by the encroaching river.

Just below New Orleans some three or four miles, with one side in the shadow of a massive factory,—a great and world-famous sugar refinery,—and crowded on the other side by a levee and a steamship slip, is "Three Oaks Plantation." The type represented by this example was a development later than that of the Sarpy mansion. This is the better known kind of plantation house and fits more accurately the popular conception. "Three Oaks" is one of the historical landmarks of Louisiana, having been at one time the residence of General Beauregard. It is not difficult to imagine the life of the Old South and its aristocracy among such a setting



THE LILY POOL, "SHADOWS OF THE TECHE," NEW IBERIA



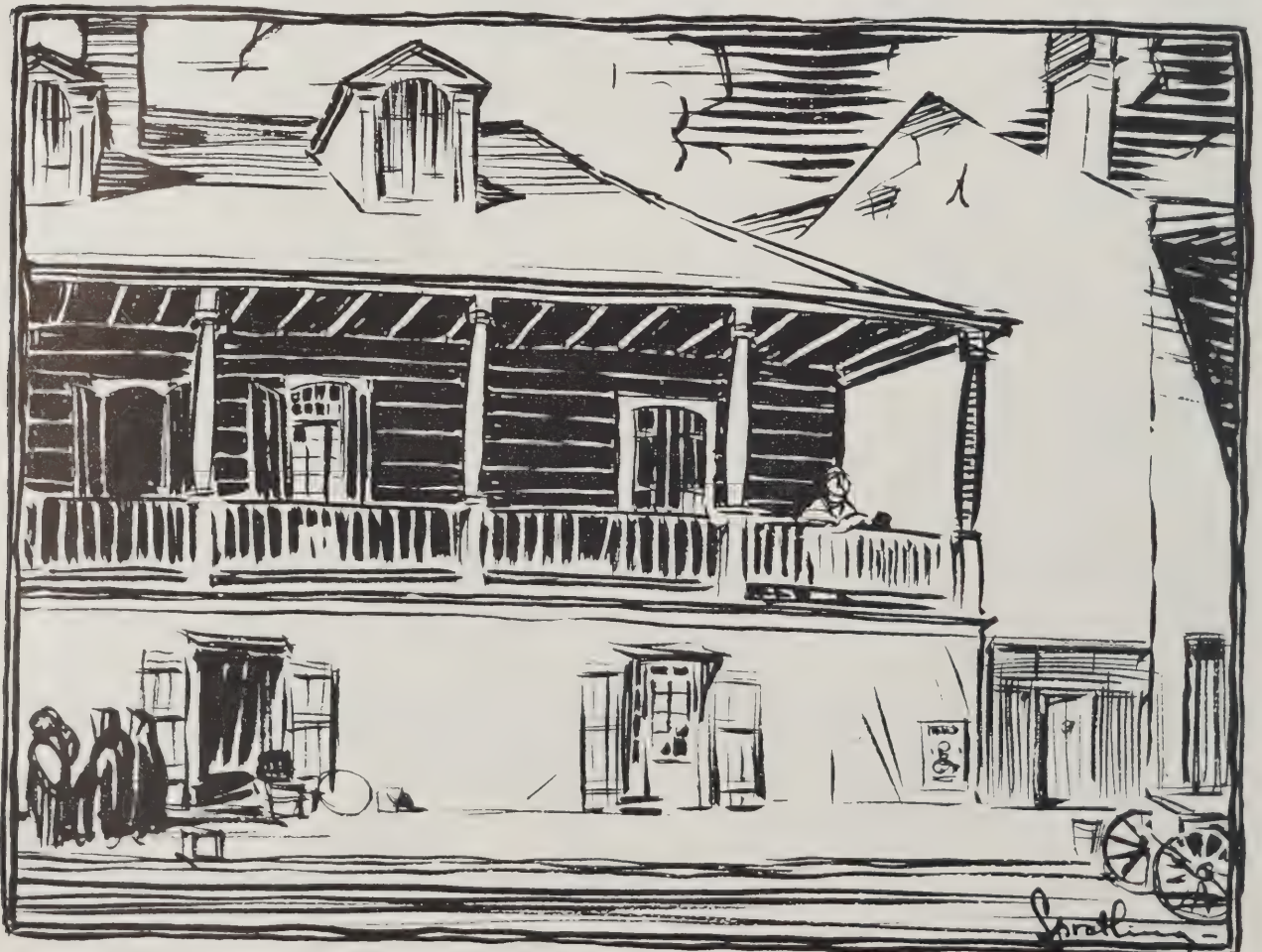
"LEIGHTON PLANTATION," BAYOU LAFOURCHE

as this. Simplicity and dignity are here perfectly expressed. The house is quite well preserved, and age has contributed a certain mellowness. The row of stately old columns, eight on the front, have acquired just sufficient discoloration, and the grand old triple oak has become just sufficiently gnarled with its gesticulating old limbs to lend the place a feeling of romance, of old time, ante-bellum dignity.

A third distinct type of the very old house is shown in that of "Oakley," near St. Francisville. This house is in the territory which at a later date was settled by the South Carolinians already mentioned. In itself, however, it is a purely pioneer type. Being unique in this respect, it has little to offer the architectural analyst of traditional characteristics. "Oakley" is the oldest known mansion in that section, having been built supposedly about 1800. It has many admirable qualities. The first of these, naturally, is that it "belongs" and springs directly from the soil and from the conditions of those pioneer days which saw its erection. The house is essentially well designed. The first story, solidly constructed of brick, supports above it two full stories and a large attic. At either gable end the house is flanked with fine, tall chimneys, the whitewashed brick of which contrast pleasingly in texture with the weatherboarded and weather-

stained sides of the building. The feature of the house is the heavy shuttering employed on the front and sides of both the second- and third-story verandas. These verandas, being broad and set high above the surrounding yard, possess with their green shuttering a sense of coolness and livability eminently suited to the climate. The approach is very simple, consisting of a single broad sweep of steps leading directly to the second-floor or living veranda. The basement, true to the Louisiana tradition, where water is ever present a little below the surface, is entirely above ground and contains, besides the kitchen and storage space, several spare rooms. The interior trim, shutters, etc. of this charming old house exhibit the most excellent craftsmanship, and the mouldings are reminiscent of the French work in New Orleans, some of which even yet remains.

"Oakley" is one of the few plantations still under the original ownership, and it is indeed a most pleasant old place to visit. It is situated on a plantation road, and the foliage and shrubbery contained in the yard so successfully conceal the building that one is unaware of the proximity of the mansion until well within the yard. The setting is very happily chosen, the trees, crepe myrtles, and the more or less exotic shrubbery appearing sophisticated and aged in keeping with the character of the house.



"Madame John's Legacy," Dumaine Street, New Orleans

Dense shadows are cast on the house itself and on the clean-swept, white-sand-strewn yard. The effect is most felicitous and lends to the house a picturesque quality all its own. Incidentally, the custom of having a carefully swept, sanded yard is peculiar to the South. In Louisiana the foliage is usually so luxuriant and grass and other growths so rank that one rarely finds, except toward the hilly section above Baton Rouge, this trivial but charming custom carried out. It is characteristic of Louisiana.

To return southward to the bayou country, the bayou, being navigable, originally formed an avenue of development, and the largest plantations are to be found on these principal waterways. Chief among these historic streams should be mentioned Bayou Lafourche and the gracious Teche. Along Bayou Lafourche, from the river at Donaldsonville southward for a stretch of 50 miles or more past Napoleonville and Thibodeaux, lies a very beautiful and once very rich section. The examples of plantation architecture found in this region, while not so numerous possibly as along the river from New Orleans to Baton Rouge, the "Upper Coast," are yet distinctive and unusual. The names of "Belle Alliance," "Maidwood," "Woodlawn," and "Rienzi," are among the more important of the section. "Maidwood" belongs among the later examples. In spite of this classification, it is still interesting as an early example when one considers the tales of

how it was built entirely by slave labor, including the hewing of the timbers, etc. It probably belongs to about the 1830 to 1840 period. In character it is very classical, being composed of a central colonnaded and pedimented mass of two stories with symmetrical side wings of one story subordinated to the central portion. The formal classicism of the house, which is very large, is relieved by the exquisite detailing of the Greek Ionic capitals of the great portico's columns. These are carved from cypress and are really rather fine. The wings contribute an even greater degree of charm with their petiteness of scale and the repetition of the pedimented idea of the main building. Their walls are relieved with simple little flat Doric pilasters at the corners and at intervals between each window from front to back. The interior is even more grand than the exterior. There is much excellent plasterwork in the best manner of the Greek Revival, and the effect is most pleasing. The planning is simple and arranged about a central hallway from front to back, the length of the hall being divided off with columns. Practically the entire interior of the left wing of the building is devoted to a tremendous ballroom, used during Civil War days as a convalescent hospital, and in these more modern times probably experiencing some disuse as a ballroom.

"Maidwood" is located two or three miles below Napoleonville and faces the bayou. Only a few



"Maidwood," Bayou Lafourche

miles farther on is found another charming old house of the same general type. It is "Woodlawn," and conforms to the type represented by "Maidwood" only in plan and period. In place of the pediment there is a heavy entablature, very Greek in detail and surmounted by a parapet which is subtly stepped toward the center of the facade, obtaining emphasis at that point. Also, the building is much smaller in scale, more compact, with heavier columns across the front, those at the ends being formed of square piers, paneled. This gives it a very original touch. As at "Maidwood," there are side wings, but in this instance an entirely different sort of effect is obtained through the discoloration of the pink and tan colored walls, caused by action of rain and sun.

On the other side of the Bayou Lafourche, in the same direction and only a mile or so outside Thibodeaux, we discover "Leighton Plantation," the residence of the Price family. Architecturally it is difficult to place this building, as it is very indeterminate in general characteristics. Here are quiet seclusion and a certain sort of homeliness. The house is very large, and one takes in at a glance the broad sweep of a long roof, indicating a thick-bodied structure, the length of the building being fronted with a deep, single-storied veranda with typical, flat, post-like columns. Large dormers breaking the roof line are very charming with round-headed, shuttered windows. The time we visited "Leighton" was late one afternoon. The long shadows with streaks of emerald green stretched themselves the length of the broad lawn. The light in the moss and thick foliage of the live oaks possessed an almost dramatic quality. As we studied the house, a string of white geese marched their solemn way across one corner of the picture, and somehow completed the scene!

The Bayou Teche region is a little remote. Historically, the two or three principal towns are very interesting. St. Martinsville at one time bade fair to become almost as important as New Orleans in the (then) French province of Louisiana. Many are the tales told of rare finds in the way of antiques, including French furniture of the Louis, fine silver, and so on, all of which takes us back to the days when that region was reached through Vermillion Bay and



Gate, the "Darby" Place, New Iberia

Grand Lake, by vessels directly from France, the mother country.

In this part of the country very early examples of note are a bit difficult to locate, but beginning with the period of about 1800 to 1830 we find many houses of extremely interesting types. Among these an outstanding example is the very well known "Shadows of the Teche," at New Iberia, the home of Weeks Hall. This house deserves a great deal of attention. As an example of what may be done to one of these old houses after it has endured 15 or even 20 years of total neglect, the house would probably best be treated in a monograph by itself. In type and plan it is rather

small, with six columns on the facade through the two stories, and a single-pitched roof which extends out to the classic entablature borne by the columns. The order employed is Roman Doric. A most characteristic feature of the house consists in the principal stairway's being on the exterior, at one end of the facade and behind *jalousies*. It is a happy solution for a problem. The house is very complete in spite of an element of compactness, and there is an auxiliary service stairway on the interior. In fact, the impression one receives of the house as a whole is that of completeness and intimate perfection throughout, from the execution of the finest mouldings to the planting with an artist's eye of the garden and of every foot of the surrounding grounds which belong to the house.

In this same locality are to be found the "Lady of the Lake Plantation" and many others, including the romantic old "Darby" place, which itself contains material for another fantasy in the manner of Poe. This entire region, in fact, abounds in romance.

Returning southward along the west bank of the river, one comes across various old houses of important historical architectural significance. Among these an old and very typical place, "Oak Alley," claims our attention. Here is a grand old house still in its glory. And its magnificent grove of oaks is certainly a glorious sight. There are 15 of them on either side of the broad avenue, stretching from the house itself to the river. "Oak Alley," with all its splendid traditions and beautiful acres, has recently passed into new hands, and is to be thoroughly restored to what was its appearance in its palmy days.

Security Bank of Chicago

CHILDS & SMITH, Architects

THE chief problem encountered in the planning of the Security Bank of Chicago, at the corner of Chicago, Milwaukee and Ogden Avenues, was the necessity of securing a monumental building with a monumental bank lobby on an unusually and irregularly shaped plot. It was decided that this could be best accomplished by designing the exterior with no definite relationship to the interior plan, a most unusual conclusion, but a conclusion which the successful completion of the building has seemed to justify.

It will be noted how very irregularly the interior columns are placed, compared with the location of those on the exterior; yet once within the building, on account of the different angles of the exterior facades, this incongruity is not apparent. Although the building is practically an individual banking structure, there are incorporated in it a number of offices on the upper floors, for the time being to be rented to outsiders, until they are taken by the bank.

The design of the exterior of the bank is a free adaptation of Italian Renaissance. Four tall fluted pilasters with Corinthian caps divide the main facade into five bays. In the center bay is located the main entrance door to the bank, executed in richly

carved stone showing an elaborate design characteristic of this style. Supported on graceful console brackets, the cornice of this door is ornamented above by a conventionalized American eagle. Giving added importance to the main floor of the building, a richly carved frieze course continues the decorations of the entrance door completely around the three street sides of the structure above the first floor windows. Heavier piers of plain stone, which emphasize and give strength to the corners of the building, help to support the well designed and massive entablature surmounted by a low stone parapet on which in Roman letters is the name of the bank.

The banking room is very well lighted by many windows, as well as by a skylight over the rear portion of the room, and by clerestory windows. The height of the main floor gives to it a monumental character and dignity, which are still further emphasized by the very fine and heavily coffered ceiling which is supported by massive Corinthian capped piers and pilasters. The clerestory arrangement of the second floor around the high open lobby of the bank is successfully treated with groups of well proportioned windows divided by muntins suggestive of Greek and Roman architecture. Above the



Security Bank of Chicago
Childs & Smith, Architects



ENTRANCE DETAIL, SECURITY BANK OF CHICAGO
CHILDS & SMITH, ARCHITECTS



MAIN BANKING ROOM, SECURITY BANK OF CHICAGO
CHILDS & SMITH, ARCHITECTS

space set aside for the cages of the various paying and receiving tellers, back of which is located the principal vault of the bank, a glass ceiling successfully treated in the Roman style greatly adds to the amount of light obtainable in this working portion of the bank. All of the furniture in the public space, such as writing tables and benches, shows the same massive type of Roman design as do the other details of the interior. In fact, the entire effect of the interior of the bank is more suggestive of Roman than Italian Renaissance architecture. This is particularly true of the ceiling, in which not only the design but the architectural ornamentation also suggests a Roman rather than a Renaissance design. There is no indication in the exterior design of this building of the high ornamental banking room within, but in character and scale there is real consistency.

In the basement are located the vaults, of the latest and most scientific design. The safe deposit vault contemplated will accommodate about 16,000 boxes, the 17 coupon booths being so arranged that they can be increased to double that number upon doing away with the Community Room. In addi-

tion to these 17 coupon booths, there are eight consultation rooms, committee rooms, etc., which may be used in conjunction with the safe deposit department. This department is also provided with men's quarters, women's quarters, officers' toilets, etc., and is in close proximity to a passenger elevator and stairway leading to the public lobby above. There are also ample trunk vaults, archive vaults, etc.

To the rear of the vaults is a special service department with a cafeteria and kitchenette for the bank employes, an arrangement found to be very satisfactory, inasmuch as the employes can always be present at the bank and on call should any matter arise during banking hours which would require their special attention. Oil is used as fuel in the boiler room. Large fan rooms are provided to insure proper ventilation of the basement. The banking floor is arranged with the usual departments, in conjunction with the officers' space, detail mention of which need not be made here. The directors' room is on the mezzanine floor; it is a circular room with a round table, and is provided with windows which look down into the lobby of the banking room.



Another View, Main Banking Room, Security Bank of Chicago

Childs & Smith, Architects

"Casa Bournita," Greens Farms, Conn.

GOODWILLIE & MORAN, Architects

By HARRIET SISSON GILLESPIE

SERENE and beautiful as any an ancient villa in Tuscany, of which it is so engagingly reminiscent, stands "Casa Bournita,"—"the little house of the Bournes,"—overlooking the blue waters of the Sound at Greens Farms, Conn., the summer home of Arthur K. Bourne of New York and Pasadena. Occupying a superb site on a ten-acre tract lying between the Shore Road and the Sound, from which may be seen the purple shores of distant Long Island, the house embodies all the romantic elements of its Italian prototype.

Rectangular in shape, it is marked by the distinctive fenestration common to the villas of Tuscany, and the resemblance is further accentuated by the typical red tile roof, and in particular by the inimitable coloring of the stucco walls, such as one finds nowhere else in the world so harmoniously developed as in this enchanted region of northern Italy. The elusive play of light and shade upon the soft rose, salmon, buff and amber surfaces is indescribably charming, and its interest is enhanced by the decorative appeal of the ornamental grilles, balconies and similar details which lend it an air of old world charm. The evident harmony of the house and the setting is indicative of the perfect accord of the transplanted type with its present surroundings, and is a convincing argument in favor of our following Italian precedent in this country. A number of admirable examples may, to be sure, be pointed out, but the adaptations in most instances fall far short of possessing the idyllic charm to be found in the ancient villas of Siena, Aretri and Fiesole.

Domestic architecture in America is entering upon a new era. The limitations imposed by the Vic-

torian age are rapidly passing, and the somberness of that depressing period is giving way to an atmosphere of European splendor and to the glory of a past rich in architectural tradition. And the fact that the expression of European ideals can be accomplished here without loss of their subtle elements is splendidly exemplified in the Bourne house, designed by Goodwillie & Moran, of New York, who in their adaptation of the type have made a valuable contribution to American country house architecture. Reminiscent also, to a degree, of the arborial treatment surrounding those gracious Tuscan villas, hidden behind the high walls along the country roads, is the landscape work, carried out under the direction of Robert Wheelwright, Professor of Landscape Architecture at the University of Pennsylvania, for here cypress, pine and ilex supply a classic note.

A low stucco wall of graceful design divides the estate from the highway and serves to mask those less interesting but very essential features, the superintendent's lodge and the garage. Pierced by small openings with iron grilles and decorated at intervals with colorful plaques in Della Robbia style, it curves in at the entrance to meet great iron-bound doors of weathered oak that might present a somewhat formidable aspect were they not so distinctly decorative in character. Just within the enclosure Mr. Wheelwright has heightened the feeling of intimacy and seclusion for which the Italian villas are famous by using profuse planting to screen the main facade and to soften the lines of the house, which is approached by drives branching to right and left, encircling a *tapis verte* and meeting at the forecourt. Only the most tantalizing glimpses of the mellow facade are



Photos. Dix Duryea

Entrance Gate, "Casa Bournita," Greens Farms, Conn.
Goodwillie & Moran, Architects



A View of the Forecourt, "Casa Bournita"

to be caught through the aisles of dwarf fruit trees, the cypress, pine and ilex massed before the entrance, and it is not until the drive is entered that the full beauty of the composition which the architects have achieved stands revealed. All the indefinable quality of the old work has been retained, and the colorful structure stands silhouetted against the vast expanse of the sparkling waters of the Sound, with skies as blue as any that ever looked down on Fiesole.

The spirit of Tuscan architecture is all-pervading, and not a little suggestive of the Villa Galileo near the little village of Arcetri, but more reminiscent perhaps of the Villette at the Villa Palmieri, San Domingo, between Florence and Fiesole. The handling of the masses, and the typical and pleasing fenestration, no less than the treatment of the roof with its wide projecting eaves, are salient points of similarity of design, to which the rich color, inevitably present, and an important stimulus to the æsthetic charm of the Italian villa, adds a final note.

The forecourt and the terrace (itself enclosed by a low balustrade with planting) further accentuate the engaging beauty of the main facade. This forecourt is ingeniously made one with the house by long sweeping curves tying into quoined piers with pine cone finials. These terminate walls, that on one side pierced for a grilled door, and that on the other screening the service portion. A fence of French split palings screens the laundry yard on the left and



Garage, "Casa Bournita," Greens Farms, Conn.
Goodwillie & Moran, Architects

continues the line of the high surrounding hedge.

The characteristic handwork of the stucco walls, with the indefinable coloring only to be found in the sunburned surfaces of Italian villas; the wood blinds with their fixed louvers painted a faded blue-green; the *stuccato* effect of the mediæval ironwork and the distinctive roof of mission tile that catches up and repeats the wall color;—all these aid in completing a picture of singularly strong appeal. The roof treatment, indicative of the extreme fidelity to detail observed by the designers, is worthy of special mention, for the tiles are laid with random exposures, without horizontal lines; the tones are all agreeably blended, and even the edges are cracked off to give the free and unstudied effect which age has wrought in roofs of the old and picturesque European villas.

Both the entrance and the loggia are trimmed with stone as near the color of the *pietra serena* employed in Italian construction as could be had. The entrance door of mediæval flavor, of weathered oak with Spanish nail heads and handwrought hardware, is framed in an arch of stone quoins. A hanging balcony overhead suggests Spanish tradition, and above it is a curiously interesting iron rod with Spanish heads from which a Roman awning may be hung.

A fitting entry into an appropriately treated interior is the truly palatial foyer, which very properly strikes the dominant note in the decorative effect and is marked by the same sense of color values that dis-



Foyer and Entrance Gates, "Casa Bournita"



Dining Room, "Casa Bournita," Greens Farms, Conn.
Goodwillie & Moran, Architects

tinguishes the exterior. Both the walls and ceiling of old ivory plaster exhibit the peculiar textural quality of the outer surfaces, but the tones are modulated to suit the indoor use. The deep, simply moulded cornice of weathered oak is in pleasing harmony with the wall tones and the floor of travertine, and it constitutes an admirable foil for the rich damasks, tapestries and early Italian furniture and a highly dignified portrait of Mr. Bourne's mother.

Old ironwork is a decorative asset to the value of which we in America have accorded tardy recognition, excepting always those marvelous examples found on the Pacific slope; but in developing the design of "Casa Bournita," the architects have followed closely European usage, and it is to the rare expression of this medium that much of its convincing similitude is due. Superb gates of ornamental ironwork, based on Italian precedent, guard the entrance, and a noble grille, hung with Florentine damask, serves to screen the foyer from the stair hall to which similar gates give access. The staircase, the *chef d'œuvre* of the composition, evidences the extreme refinement of detail and fine workmanship to be achieved by this means. A gem of lightness and grace, self-contained in its type of construction, it winds up in a pure elliptical curve, and at the upper floor is met by other ornamental iron gates of equal form and symmetry. Slender balusters of iron of varying design, reinforced with a twisted scroll, start from a newel once part of an ancient candelabrum. Niches are set in the wall and lined with glazed Spanish tile in gay colors; and the lantern and side lights, reproductions of antiques, are in character.

Mr. Bourne made but few stipulations with the architects in planning his house, and these mainly affected the essentials of a gentleman's place in the country. There was to be no striving for effect, no ostentatious display, but rather did the owner express a preference for the refinements of a home that was to be that of a young and growing family, whose interests he had most at heart. As a result, a subtle harmony of purpose is apparent, not only between the house and the grounds but also between the architectural treatment and the furnishings. The house itself is arranged so as to afford the utmost comfort and convenience for the family, with rooms of generous proportions, commodious servants' quarters, and kitchen equipment that is the last word.

An atmosphere of refined simplicity pervades the house. The living and dining rooms are dignified examples, based almost wholly on Italian tradition, though the richly beamed ceiling in the former room is Spanish rather than Italian in type. Each of the rooms contains treasures gathered by Mr. Bourne on his travels or selected by him from noteworthy collections, and all have been assembled so as to emphasize rather than destroy the intimate home atmosphere. The second floor, given over to the master bedrooms, is conspicuous for its convenience of arrangement and pleasing harmony of treatment. The walls and trim are done in soft colors, with painted

furniture to correspond. The bathrooms have the most modern of fittings, with tile floors and enameled walls. A loggia, opening off the children's room, affords delightful play space and does duty as a sleeping porch as well. The governess shares her suite with the youngest child, and a valuable feature is a convenient kitchenette for the hygienic preparation of the baby's food.

Especial attention was given to time- and labor-saving methods in planning the culinary department. The walls and ceilings are of enamel with trim of metal to finish the openings and floor base, the metal being applied flush with the walls. The floors themselves are covered with bright colored linoleum. Steel dressers and cupboards are built in with no cracks or mouldings to act as dust catchers. An incinerator disposes of rubbish. Although gas is used for fuel, there is electricity for refrigeration, plate warmer, percolator and similar requirements of the household. One novel feature is a special kitchenette apart from the regular kitchen for the preparation and cooking of vegetables; another is a fruit closet, fitted with wire shelves and provided with outside ventilation.

The southern facade of the house is quite naturally influenced by the physical beauty of the site, the inspiring sweep of the grounds to the water's edge, and the vast unobstructed view of the Sound; and in order to afford full enjoyment of the pleasing outlook, the living rooms were given positions of prominence, and the flagged terrace, where in summer the family life inevitably centers, is accorded a place of due importance. Here also the colorful wall surface vies in artistic appeal with the picturesque ironwork. The latter finds its best expression in the graceful hanging balcony off from Mrs. Bourne's room, a balcony which, supported on stucco demi-vaults springing from ornamental caps, is enclosed by an unusual railing in which flower pot holders have been worked into the design.

All the French windows on the Sound side have iron grilles, and the door to the terrace is provided with iron gates. The entrance is surmounted by an Italian lantern of mediæval pattern which is supported upon ornamental wall flanges. Tall, conical pines stand, sentinel-like, on either side of the door, and with their bases screened in a mass of English ivy they strike a pictorial note in the decoration. The terrace itself is distinguished in color and ornament, the floor of parti-colored flagstones repeating the tones of the stucco walls. The flags are laid to center about a huge central stone, carved to imitate an old-time compass, with the cardinal points, and with the arrow pointing to the north. Enclosing the terrace is an ornate stucco rail embellished with flower pot terminations. This is a home to which art and nature have contributed liberally, and which but for geographical limitations might well be one of those romantic villas on the sunny slopes of the hills of Fiesole, outside of Florence, which supplied so great a measure of its mellow and appealing charm.

Early Ironwork in Charleston

By ALBERT SIMONS AND SAMUEL LAPHAM, JR.

IF one makes any study of the architecture of our forefathers in this country, one soon discovers that one has become engaged in research, not alone into architecture but into all the accessories of architecture as well. These accessories, one discovers, include all manner of crafts and involve all degrees of craftsmanship. The smallest attempt to explore any of these enticing bypaths can but bring the realization that each is a subject with a full development and history of its own. The histories, however, of these minor arts and crafts are not generally recorded, as are those of the major arts, but have to be gleaned from references half lost in dusty records of other matters, and in some cases gathered from oral tradition. To do full justice, therefore, to any minor branch of craftsmanship as practiced in a locality, one should devote painstaking research as well as years of time to it. This is not always possible, and the architectural profession still has much to learn about the minor arts of the times of the colonies and the early republic. Under this condition one can only realize in passing that the wood carving, the hardware, the mantels and the ornamental ironwork of our historic buildings have a history of their own, and one then returns to the general subject of architecture with a feeling that many rich veins of secondary interest are still untouched.

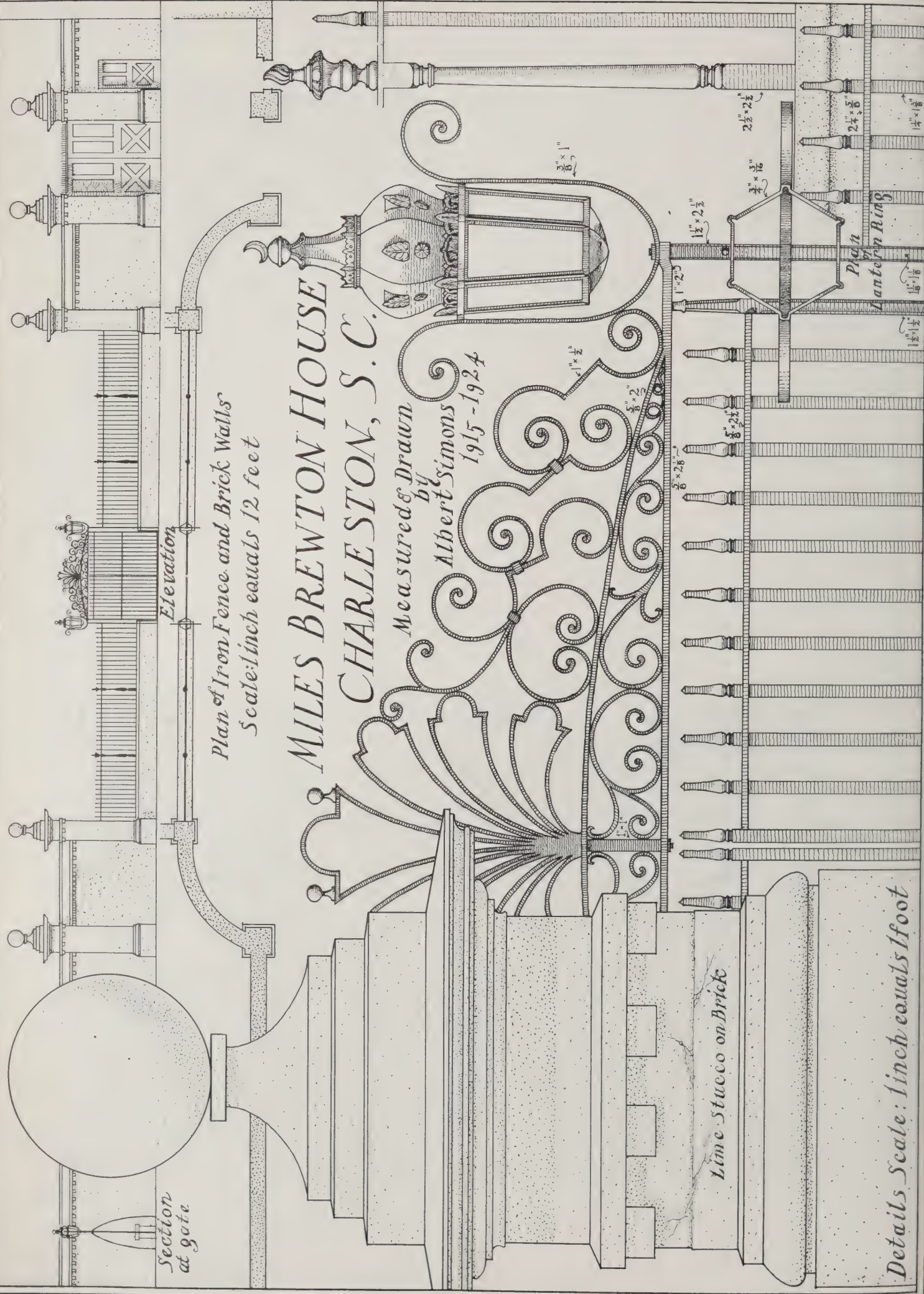
These secondary fields are wide enough for many to work in, and they should be worked before time takes its toll of what slight records and traditions still remain. It is with this excuse for their scantiness that the present notes are presented, because of the interest of many architects in our local ironwork, of which more remains than might be supposed.

Of the various accessories of architecture, ornamental ironwork appeals to many,—it catches the eye of the layman and tourist more than anything else, possibly because it is on the outsides of buildings and can be seen and felt; it appeals to the designer, the artist and the architect because in it are found instinctive beauty of line, craftsmanship and design together with a little known history of its own. Sparsely used in New England, increasing in richness as we go southward through the middle colonies and Virginia, reaching its full perfection of design in the southeast and becoming most profuse, florid, and almost overdone in Louisiana, we have, in ornamental ironwork as an architectural accessory, a form of art with a life of its own, no matter how secondary it may be in importance to the all-inclusive art of architecture, the mistress, indeed, of them all.

Although there is a great wealth of ornamental ironwork in Charleston, Savannah and other southern cities, there is practically no documentary



Wrought Iron Gates and Fence, Miles Brewton House, Charleston



Elevation

Plan of Iron Fence and Brick Walls
Scale: 1 inch equals 12 feet

MILES BREWTON HOUSE CHARLESTON, S. C.

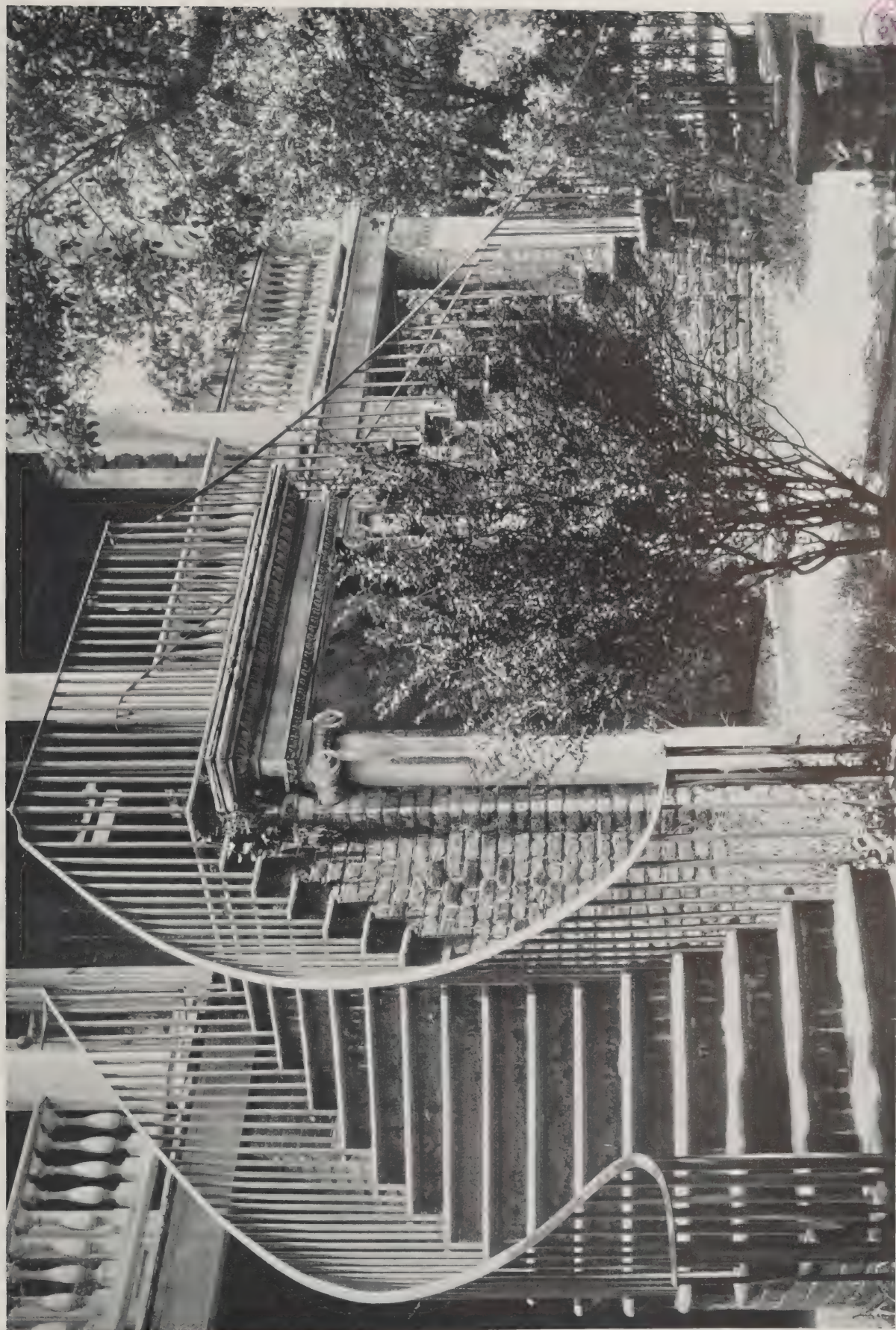
Measured & Drawn
by
Albert Simons
1915-1924

Section
at gate

Lime Stucco on Brick

Details Scale: 1 inch equals 1 foot

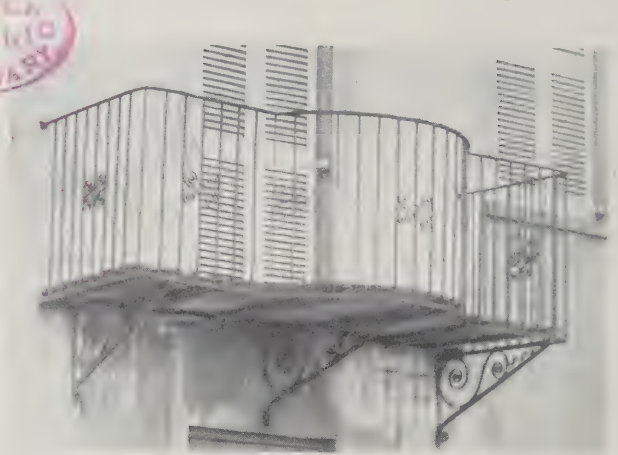
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WROUGHT IRON STAIR RAILING, ABOUT 1830



Iron Balcony; House Built Prior to 1800



Wrought Iron Balcony with Semi-Circular Bay

evidence on hand today preserving the names of the artificers of these graceful fabrics. There are two causes for this documentary silence: first, that personal letters and accounts bearing on the subject were lost or destroyed in the wrack of war and invasion during the '60s; second, that the humble iron craftsman created forms of beauty in the sweat of his brow, and in a society which had become by the middle of the century essentially aristocratic, such persons were not regarded as subjects for elegant and polite dissertation, unlike those literary gentlemen who contributed sonnets and elegies to the quarterlies, whose tender memories have been preserved in lavender and roses by succeeding *literati*!

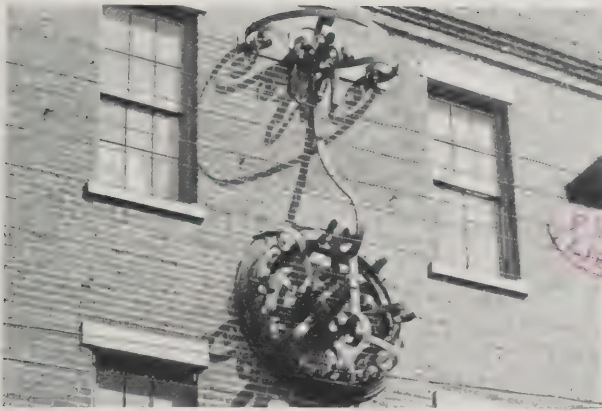
Doubtless there was much good ironwork executed in colonial times for gates and balustrades of exterior stairs, but today there are comparatively few examples that can justly be considered as belonging to that period. Many a Colonial house has beautiful ironwork, to be sure, but investigation reveals that it was erected a half century or more later than the date of the house. The genuine surviving colonial examples, although simpler, bear a general resemblance in character to that manner of design introduced into England in the days of Sir Christopher Wren by Jean Tijou. The present dearth of colonial ironwork may be partly explained by an observation by John Bennett, the novelist and historian:



Drop in Handrail on the Return Ends of This Balcony Permits Swing of Window Blinds



Wrought Iron Balcony and Cast Iron Ventilators on Early Nineteenth Century Building



Wrought Iron Sign on Shop of Early Metal Worker



Balcony Rails Full of Delicacy and Refinement

"I find it stated that in the Revolution, many wrought iron railings, of extra good and good quality, were taken by the American forces to make horseshoes for the light horse troops and draught horses of the army. A certain proportion of colonial ironwork would, therefore, have disappeared from this cause."

Doubtless the premises of the cultured and wealthy Tories suffered most in these requisitions!

Oral tradition among the ironworkers of Charleston has preserved the names of a succession of master craftsmen going back to the times of the American Revolution. Of the earliest of these, Tunis Tebout, little is known except for a very brief ref-

erence which occurs in the "Traditions and Reminiscences, Chiefly of the American Revolution in the South," by Joseph Johnson, M. D., published in 1851. Here it is related how in the fall of 1766, Gen. Christopher Gadsden, on the advice of John Laurens, frequently met and conferred with a group of 25 master mechanics and tradesmen of the city and advocated resistance to British oppression. These meetings took place under a large live oak, since known as the "Liberty Tree," near Gen. Gadsden's home. The names of these patriots are recorded by Dr. Johnson, who comments: "All that are known were the fathers of families, reputedly engaged in their maintenance, all in easy circumstances, none



Wrought Iron Gates and Balcony with Cast Iron Panels; Law Office of James Louis Petigru, Built 1848



Old Wrought Iron Gate, Reset on Estate of Mrs. W. J. Pettus, South Bay, Charleston

rich. At least half of them were master mechanics, the very bone and muscle of a thriving community." The list of the "Liberty Tree" patriots includes the names of both Tunis Tebout and his partner, William Johnson, who were "blacksmiths, carrying on an extensive business on Beal's Wharf." Oral tradition does not associate Johnson's name with any architectural ironwork, but Tebout is credited with the fences and gates of a number of churches erected in the early years of the nineteenth century. His work is rather simple, and is generally composed of straight bars of large section. It is perhaps worthy of note that the terms "blacksmith" and "house carpenter" as used in the eighteenth and early nineteenth centuries were applied to the occupations of

men of considerable general education and proficiency in architecture and engineering as understood in those days. William Johnson, the patriotic blacksmith, was the father of Dr. Joseph Johnson, the scholarly historian. With such high types of men engaged in the mechanic trades, it is small wonder that masterpieces of craftsmanship were produced. In the simple society of colonial times, before vast fortunes were amassed, men of great worth and high intelligence were content to earn their livelihood following the trades of carpenter and blacksmith.

In 1820, Justi came to Charleston from Germany, and as several of his works bear his name plate, his style characteristic may be studied, and other unsigned works may be reasonably attributed to him.



Wrought Iron Gates, Simonton Residence, Charleston. Attributed to Werner and Dothage

He used rather narrow ribbons of iron, of thin section, coiling them up in delicate spirals of unimaginable lightness. The classic urn, outlined in most graceful contours, is one of his favorite motifs and betrays the prevailing taste of the period. The gates (built 1840) of St. Michael's Church (1752), Charleston, which are illustrated in "The Georgian Period," bear his name and are doubtless his masterpieces. Their excellence is well known.

Only a few years after the arrival of Justi, in 1828, Werner came from Germany, and, although the date of his death is not known, he was still executing work in 1870. He lived through the period of the greatest prosperity of the city, and probably executed more of the ironwork found in Charleston

today than anyone else, owing to the very favorable economic conditions of his time. He seems to have operated a rather extensive forge and employed three white workmen and five colored men. Of the white men, Dothage, who worked with him from 1849 to 1860, appears to have equaled his master's skill. Of the colored men, tradition preserves the name of "Uncle Toby" Richardson, who was entirely illiterate and could not even read a foot-rule, but who was extremely skillful in executing work laid out for him by his masters. The type and style of Werner's work can be judged by reference to the illustrations of the Hibernian Hall and the Synagogue appearing in the articles on "The Development of Charleston Architecture" in the December,



RESET WROUGHT IRON BALCONY; KING STREET, CHARLESTON



CAST IRON COVERED VERANDA AND OPEN BALCONY OF SAME DESIGN: MEETING STREET, CHARLESTON



A SECOND STORY VERANDA; WROUGHT IRON, ROCOCO DESIGN

1923 and January, 1924 issues of THE ARCHITECTURAL FORUM and to the Simonton gateway illustrated in this number.

One of the most curious and unique works executed by Werner was a colossal wrought iron bracket, 12 feet high, composed of an infinite number of scrolls, secured to the third-story front of a great four-story brick building. It is said that a giant anvil of solid iron once hung from the prow of this scroll and was the street sign of "McLeish's Smithy," which was kept open night and day, and that journeymen were permitted to come there after their regular working hours and execute such extra work for themselves as their individual industry and opportunities might permit. No doubt this "Atelier McLeish" was a most valuable training school in which local mechanics might acquire that technical proficiency necessary for the execution of the great quantity of work that was constantly being produced at that time.

Besides wrought iron work, Werner executed a great deal of cast iron. This material was especially adapted to the construction of the long verandas or roofed balconies, which were placed across the street facades and entered from second-story windows which opened all the way to the floors. These iron verandas seem to have originated at the eighteenth century seaside resorts of England, such as Bath and Brighton. On such verandas an invalid might sit and "take the air and enjoy the prospect," while being at the same time shaded from the sun. The design of this cast iron work is much too sophisticated to be the inventions of local artisans; and, in fact, as the same patterns occur frequently repeated, not only in Charleston and Savannah, but also in Philadelphia and probably other northern cities, it would seem that they were more or less standardized and accessible to the iron trade all over the country at that time. These cast iron balcony grilles reflect all the various schools of taste of the mid-century; some are Greek Revival with motifs of spiny acanthus and honeysuckle; some Gothic Revival with trefoils and crockets; others in that strange revival of the Rococo that seems to have come into vogue after the restoration of the Bourbons to the throne of France; still others are made up of rather naturalistic *rincaux* of ivy or grape vines that would have doubtless thrilled the pre-Raphaelite souls of John Ruskin and William Morris!

Another use for cast iron work was for the ventilator grilles in the facades of numerous buildings built in Charleston between 1830 and 1870. These generally occur in commercial buildings with party



Wrought Iron Lunette Grille, Arched Passage, "Cabbage Row," Charleston

walls and having, on the street facades, parapets which concealed sloping roofs. This construction required ventilation for the dead air spaces between the top-story ceilings and the slanting roofs, and the grilles were inserted in the parapets above the upper story windows and centering upon them. They average in size about 2 by 3 feet, and can be grouped in several special designs. Those that

most frequently occur are the floral motifs of the honeysuckle and the thistle, and the patriotic motifs of the eagle on the globe and the palmetto tree, this last being the symbol of the state of South Carolina.

Almost the last of the iron craftsmen was Frederic Julius Ortmann, who came to Charleston in 1847 from Baden-Baden. He was probably a political refugee, whose republican ideas were not approved of by the monarchical authorities. Besides making ornamental ironwork, he is said to have made surgical instruments. During the '60s he served in the Confederate Army, and after the war continued his craft, which is being carried on very successfully by his sons today. One of his sons, the late Julius Ortmann, has been the source from which most of the traditions of the craft as given here have been derived. Other valuable notes have been secured through the courtesy of Mrs. S. G. Stoney, Joseph I. Waring, and C. S. Dawson.

As to the materials used for this work, most of the iron was imported from Sweden in half-cargoes. The Swedish iron seems to have been generally preferred, as it has a coarse-grained, shred-like texture, is very malleable and resists the corrosive action of salt sea air. An interesting sidelight on the durability of this iron is shown in the gates and fence of St. John's Lutheran Church, Charleston, illustrated in the January, 1924 issue of THE FORUM. These were erected in 1823 and, although completely exposed to the weather, wherever they were erected on brick or on stone pavements are still as good today as ever. One side gate, however, resting on damp ground and at the sidewalk level, is disintegrating in its bottom scrolls after a century's time, although all the rest of the gate has resisted corrosion. Nuremberg iron was highly prized for making very slender members, such as the sticks in balconies. From about 1820 up to the time of the Civil War some iron ore from the Piedmont section of South Carolina was sent to Sweden to be purified.

It is hoped that these rather scattered notes may solicit further investigation by others in this most interesting department of early American crafts, and will at least record facts that otherwise might be lost.

The Bridge as Architecture—Part II

By REXFORD NEWCOMB

Professor of Architecture, University of Illinois

IN THE FORUM for February it was our pleasant task to review the architectural qualities of some of the famous old bridges of England and France. There something was said of that sturdy, beautiful and structurally logical old Roman work, the *Pont du Gard*. Bridge building with the Romans reached a high peak of perfection, structurally and artistically, and upon Roman bridge building prowess the bridge builders of subsequent times have relied for inspiration and example. Italy has long been a land of interesting bridges, and in Italy, as in France, it is difficult to choose between the great number of bridges which, because of one virtue or another, demand attention. There is Rome with her many bridges, some of them coming down, in part at least, from ancient Roman days; Florence with her *Ponte Vecchio* and *Trinita*; Pavia with her curious old covered bridge over the Ticino; Verona with her *Ponte Romano* and *Ponte Scaligero*; Pisa with the *Ponte de Mezzo* and others; and lastly Venice with her matchless Rialto (Fig. 14) and Bridge of Sighs, to say nothing of the charming little bridges one finds scattered all through rural Italy. All of these would seem to demand space in even the most fragmentary discussion of Italian bridges. The writer found the Roman, Venetian and Florentine bridges by all odds the most engrossing from several points of view.

Rome has no fewer than 15 bridges spanning the

muddy Tiber, and of these some five are relics of ancient days. The earliest bridge of the Romans was the wooden bridge, *Pons Sublicius*, erected about 600 B.C., and, due to a certain sacred significance, always restored in wood, even during the Imperial period. It has, of course, now completely disappeared. One of the interesting existing fragments at Rome is the *Ponte Rotto* ("Broken Bridge") called in Roman days *Pons Æmilius*. This structure dates from 178 B.C., and has considerable claim to our attention as a distinguished piece of architectural composition as well as an efficient bit of engineering. Only one complete arch with parts of two others stands today, but one can easily reconstruct a picture of how this noble structure must have looked in the days of the Cæsars. It is just below the island in the Tiber, and at a point that today makes it exposed to heavy currents; hence it has suffered much in flood times, and has been partially swept away on at least four different occasions. Just above the *Ponte Rotto*, and connecting the island with the mainland on the north, is the *Ponte Quattro Capi* (Fig. 16), so called because at either side of the roadway at the north end of the bridge stand pedestals bearing four sculptured heads. The structure dates from 62 B.C., and consists of two great arches of 80-foot span carried by a central arched pier in the middle of the river. The structure is 250 feet



Fig. 14. Ponte di Rialto, Venice



Fig. 15. Ponte San Angelo, Rome

long, and the arch rings are 6 feet deep. This bridge is said to have been longer at one time, and legends are current of other arches buried in the embankment near by. This bridge (called by the Romans *Pons Fabricius*) is the only one of entirely ancient Roman construction remaining in use at present. The writer noted this inscription carved in the stone on the western face over the south arch: "*L. Fabricius C. F. Curiam Faciundum Cœravit*"

On the opposite side of the island, a continuation of the street that passes over the *Ponte Quattro Capi* also passes over the *Ponte San Bartolommeo* (anciently the *Pons Cestius*), which originated in 46 B.C., but has been rebuilt many times, the last



Fig. 16. Ponte Quattro Capi, Rome

time as recently as 1886-89. *San Bartolommeo* is a single-arched bridge with a span of 76 feet. According to Piranesi, the great Renaissance engraver, both this bridge and the *Pons Fabricius* were supported on inverted arches built under the water. Whether this is true, or whether it is merely a legend, has not been definitely established.

Another Roman bridge of ancient foundation is that of *San Angelo* (Fig. 15) which, in an altered state, still serves as one of the Eternal City's principal bridges. It was built by Hadrian in A.D. 138, to give access from the *Campus Martius* to the great mausoleum that he was constructing for himself on the opposite bank of the Tiber. This bridge was the ancient *Pons Ælius*, and is said to have been a covered bridge, being sheltered by a canopy of bronze plates carried upon 40 bronze columns. Various popes made changes and repairs, and when the mausoleum of Hadrian was turned into a fortification of the Papal States, the bridge was decorated with marble statues of angels. Pope Clement VII, in 1530, erected the bronze statues of Sts. Peter and Paul at the ends. Aside from the parapets and statues, the masonry portion of the bridge, although completely restored (1892-4), is of practically the same form in which it appeared in old Roman days. Of the seven arches only the central three, however, are of ancient construction.

Going northward by way of the *Via Flaminia* from the *Plazza del Popolo*, one arrives in the course of a mile and a half at the old *Pons Milvius*, often called the *Ponte Molle*. This ancient bridge was constructed to carry the Flaminian Way over the Tiber, and is said to date from about the year 109 B.C., although, since the road was built about 220 B.C., it is possible that this bridge was antedated by earlier structures upon the site. The present bridge, some 413 feet long and nearly 29 feet wide, is one of the longest bridges of Rome. The four central arches of the total of seven are known to have reached our time unchanged. The triumphal arch entrance to the bridge at the north dates from only 1805. It was over this bridge that the Catilinarian conspirators fled after the murder of Julius Cæsar. Rome has a number of modern bridges, the most interesting of which are the *Ponte Margherita* and the



Fig. 17. Bridge of Sighs, Venice



Fig. 18. Ponte Vecchio, from Ponte Santa Trinita



Fig. 19. Ponte Vecchio, Florence

Ponte Victor Emmanuel. The pylons of the latter are indeed decorative, and notable in certain ways.

One of the most famous bridges in the world is the pretty though diminutive Rialto Bridge of Venice (Fig. 14), a structure well known to all English-speaking people through the works of Shakespeare, who made it the scene of episodes in his "Merchant of Venice," written at about the time the present Rialto Bridge was being erected. With the exception of two insignificant modern bridges, the Rialto is the only bridge over the Grand Canal. The Rialto, like "Old London" Bridge and the *Ponte Vecchio* of Florence, is a bridge of shops. In mediæval days, when bridges were few, a shop upon a bridge was a desirable possession because of the constant stream of traffic that passed its doors. A shop on London Bridge or the Rialto was as good as a fortune. In Venice the earliest bridges were of wood, and the first Rialto Bridge was erected on boats. Eventually, even in so marshy a situation as Venice, stone for bridge building came into use. The early pontoon bridge of Rialto was built in 1178 by Nicolo Barattieri, and this was replaced in the middle of the next century by a wooden bridge carried upon piles with provision for raising the central portion for the passage of boats. The present bridge, of white Istrian stone, was designed by Antonio Contino, nicknamed "Antonio da Ponte," who came off the better in a competition with the architect Palladio for the design of the structure. It is of the single-arched, stepped type, with a 91-foot span and a width of 72 feet. The total length of the bridge is 158 feet, and its height of 14 feet, 6 inches above the water barely admits of the passage of the modern omnibus ferries that serve as common carriers along the Grand Canal. The bridge is particularly architectural in character, and carries two rows of shops and three roadways, one on either side of the shops, next to the balustrades, and one between the shops. Even at very early hours of the morning the writer has found the bridge thronged with pedestrian traffic, and it is crowded during the entire day.

Venice has some 378 stepped, stone bridges that connect the innumerable islands that go to make up this marvelous city, but since there is no heavy traffic, no horses being allowed, there is little demand for

the large and massive bridges that are usually seen elsewhere. However, all Venetian bridges must be high-arched to permit the passage of boats and gondolas, and hence most of them have to be crossed by means of flights of steps or else be high enough above the water to give clearance. The Rialto is of the first class, the famous "Bridge of Sighs" (Fig. 17), designed and built by the same architect as the Rialto, is of the second order. This well known bridge, which connects the Ducal Palace with the prison, was completed in 1597. It crosses the *Rio Della Paglia*, which is one of the handsomer small canals of the city, at a height of 32 feet. This structure, like the Rialto, is of white, marble-like Istrian



Fig. 20. Ponte Sisto, Rome

stone, and thus it harmonizes with the adjacent buildings. A central partition divides it into two passages, each of which, although lighted and ventilated by the handsome marble grilles that look down upon the canal, is rather dark. One passage was for criminals, the other for political prisoners, and if the stories that connect themselves with this bridge are true, the way of the political prisoner was far harder than that of the house-breaker or murderer.

Florence has a number of interesting bridges, but none compares with *Ponte Santa Trinita* for grace and beauty, or with *Ponte Vecchio* for historic interest and human associations. Nor does *Ponte Vecchio* suffer in comparison with its more pretentious and more modern neighbor. A comparison of the arch curves of the two can be gained from Figures 18 and 19. *Ponte Vecchio's* three graceful arches, its beaked piers and its central arcade, all combine to make a most delightful composition. Its roof line is, to be sure, a bit uninteresting,—far less interesting, for instance, than that of the Rialto,—but this is its only defect. *Ponte Vecchio* carries shops on either side of its roadway, and these shops have from early times been devoted to the sale of jewelry and silver; the Florentine jewelry industry, in fact, centers at the *Ponte Vecchio*. Just under the roof is an upper passage which connects galleries on either side of the river, leading on one hand to the Uffizi Palace, on the other to the Pitti Palace. There was a bridge at this site as early as A. D. 117, and it is said by some that there was an earlier

Roman bridge. The present structure dates from 1345, and is generally attributed to the architect, Taddeo Gaddi. *Ponte Santa Trinita*, a gem of graceful masonry construction, dates from 1567-70, and was designed by Ammanati. It is famous among bridges.

Of the interesting bridges of Spain there is indeed much to be said. Spanish bridges find their chronology falling under three regimes,—Roman, Moorish and Spanish,—the latter classification dividing itself into Romanesque, Gothic, Renaissance, and modern periods. Spain became in time one of the most Roman of all the Roman provinces, and many fine examples of Roman structural prowess still survive the events of centuries in this interesting land. The great bridge over the Guadiana River at Merida, with its 64 arches and its length of nearly 4000 feet, is said to have had its beginning in the time of Trajan. There are other well preserved structures at Martorell, Orense, Almazar, Alcantara, and Salamanca, to say nothing of such masterful structures as the aqueducts of Segovia and Tarragona, famous among achievements of engineering.

Interesting as are these Roman structures from either the technical or the artistic point of view, the writer will have to omit discussion of them here. He wants, however, to call attention to two very interesting bridges in the ancient city of Toledo. Toledo came to the zenith of its prosperity under the Moors, and after the breaking down of the Moorish power became the seat of the proud Kings of Castile, growing to a population of some 200,000 souls. The

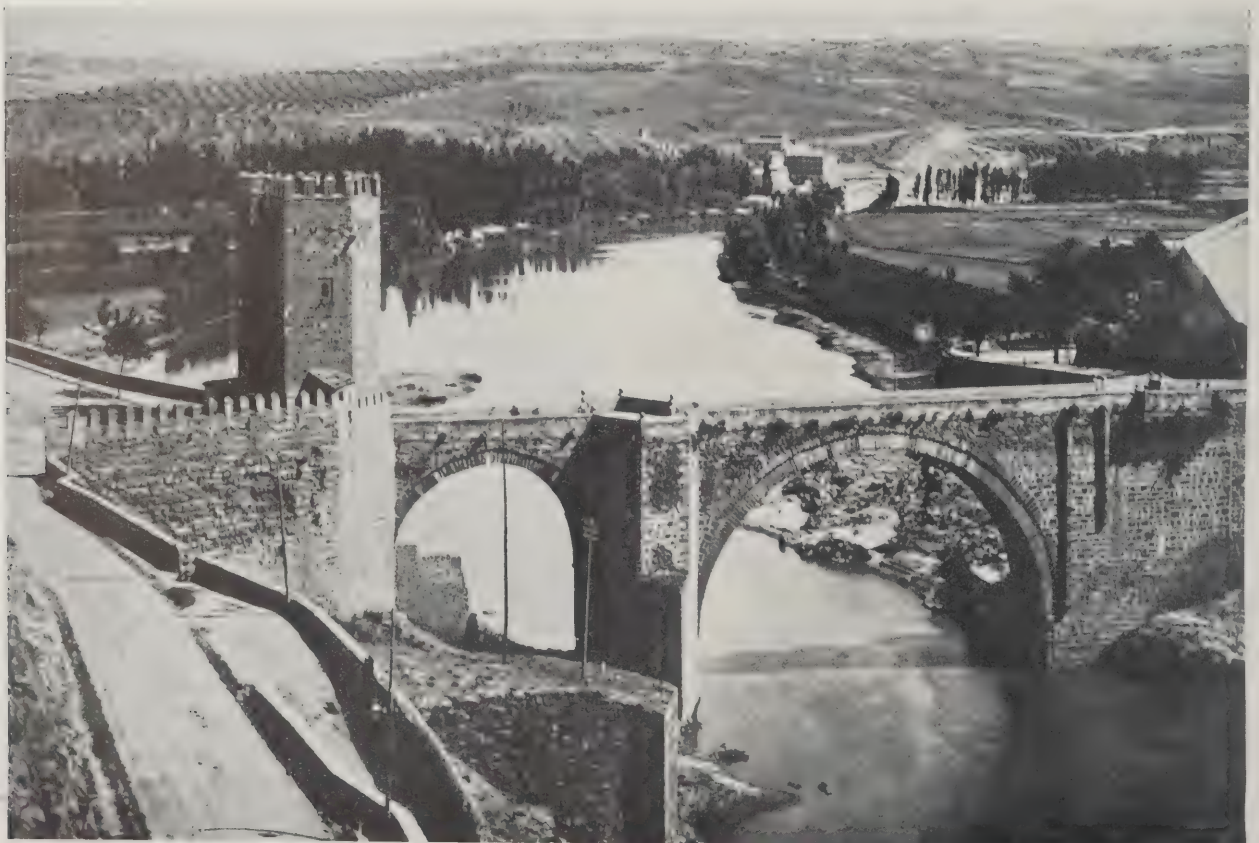


Fig. 21. Puente Alcantara, Toledo

situation of the city is most wild and picturesque. Perched upon a rocky promontory, the city is bounded on three sides by the Tagus River in much the same fashion that the River Wear bounds the castle area of Durham. Toledo's promontory is of course far larger than that of Durham, the banks far more rocky and precipitous, and the hillsides almost treeless. The writer thinks the site of Toledo the most striking and unique that he has ever seen. The city is approached by only two bridges, the *Puente Alcantara* and the *Puente de San Martin*. Both are Moorish structures,—but are said to have been built upon Roman foundations, and each is unique and typical of Moorish bridge building in general.

El Puente Alcantara (derived from the Moorish "Al Kantara,"—bridge) stands at the northeast corner of the city, and it is across this bridge that one entering the city by rail must pass. The railway station is on the side of the Tagus opposite the town, and the usual conveyance from the station to the hotel is a car drawn by four mules, sharp-shod, which climb the steep and narrow streets of the city with almost the agility of mountain goats. The streets are so narrow, hilly and crooked that nothing in the way of electric trams could possibly operate. The structure of the Alcantara is of Moorish origin and design and, although the present structure seems to have been rebuilt in the times of Alfonso the Learned (1258), with later repairs by Archbishop Pedro Tenorio (1389), it preserves fairly truthfully the lines of the original Moorish fabric. It consists

(Fig. 21) of one large semi-circular arch and a smaller arch of the same character. A well designed pier on the town side provides lookouts, and on the same end is a great Moresque tower giving the bridge much of the military aspect that certainly characterized it in mediæval days. Viewed from almost any position, this bridge makes a picture, and it is not at all strange that painters as well as those interested in bridges have praised it highly.

To the writer, however, the other bridge, *El Puente de San Martin*, is more beautiful and interesting. *San Martin* is far more robust in its proportions, and, if one were assigning genders one would certainly call *Alcantara* feminine and *San Martin* masculine. *San Martin* has five pointed arches, one large flanked by two smaller arches. One heavy pier on the town side carries lookouts, while other lookouts, over the corresponding pier, are carried upon corbels. The bridge is protected at either end by embattled towers (Fig. 22), guarded to this day by officials who make it their business to inspect all comers and goers. The writer was allowed to photograph and measure freely, and came away enriched by his observations. The bridge dates from 1212, but in 1386 the great arch was destroyed. It was rebuilt at once, but the architect, according to a story told by George Edmund Street, was a careless man and, perceiving that his work was unsound and would fall when the centering was removed, confided to his wife, who forthwith set fire to the centering, the flames from which did their part in destroy-



Fig. 22. Puente de San Martin, Toledo

ing the faulty work, with the result that her husband had a chance to do the work over again. This time, profiting by his experience, he built so well that the structure comes down to our day unimpaired. The archbishop, it is said, did not put in a claim for fraud against the architect, but on the contrary, knowing human nature, congratulated the architect on possessing so brilliant a wife!

The bridges over the Tagus at Toledo should be thought of as military works,—fortified bridges. They are rather refined to carry full conviction as to their military strength, but their strategic positions permit a rather more daring type of construction than would such a site as that occupied by the bridge over the Guadalquivir at Cordova. In this long, low-lying structure with its heavy merlonned towers we have a bridge of military character. What a contrast between the bridge at Cordova (Fig. 23) and the Tower Bridge at London! The bridge is 730 feet long and has 16 semi-circular arches carried upon heavy piers. The bridge undoubtedly stands upon Roman foundations, but it is itself more Moorish than Roman. It was thoroughly renovated and repaired a few years ago, hence it presents a rather new appearance. The road to Seville begins at the tower end of the bridge, and the bridge-way is constantly in use by burro pack-trains and drivers bringing sheep, goats and cattle into the city. The writer spent the larger part of a summer morning dodging donkeys and goats while he prosecuted his studies amid the sounds of hoofs and tinkling bells and the

cloud of dust that the throngs of the beasts kicked up.

These fragmentary paragraphs, then, indicate merely some of the impressions, inspiration and data gained by an architect upon a summer's holiday. There is freedom out on the highway, and one senses the joy of the explorer in following the open road. If that road should lead eventually to an interesting old bridge, what a repayment for one's exertion! The search for historic and beautiful bridges is as pleasant a pastime as star-gazing or fishing and, from the writer's point of view, a great deal more profitable. The Roman arch and the bridge hold a significance and symbolism that should supply one of a philosophic turn of mind all he needs in the way of material for speculation, and to the writer, part of the joy in the contemplation of a successful bridge lies in the way it triumphs over nature. As with beautiful buildings, the more one studies beautiful bridges the more one loves them. There is a pot o' gold at the base of the Roman arch!

The architect interested in European bridges owes a debt to the builders of ancient Roman days. The Romans, with their keen appreciation of whatever aids organization, well know the value of excellent roads to unite the Eternal City to her widely scattered provinces, and all over Europe bridges were necessary to carry roads over rivers and gorges. Thus the engineers followed in the wake of the Roman legions, and wrought those marvels of engineering which endure centuries after the legions have vanished and Rome's domination has come to an end.



Fig. 23. Bridge Over the Guadalquivir River, Cordova

THE BUILDING SITUATION

A MONTHLY REVIEW OF COSTS AND CONDITIONS

THE final construction figures for the United States during the year 1925 as conservatively estimated by the F. W. Dodge Corporation total approximately \$6,600,000,000 and amply justify the prediction of THE ARCHITECTURAL FORUM made in January, 1925 for a \$6,000,000,000 building year. The prediction of THE FORUM made at the first of this year that 1926 would be another six billion dollar year is definitely justified by the reports for January and February. The month of January showed a total of over \$450,000,000, which is the highest total ever recorded in the first month of any year, and represents an increase of more than 50 per cent over the amount of the contracts let in January, 1925. During the month of February the record volume of building construction continued, that month showing nearly \$400,000,000, which was an increase of 25 per cent over February of last year, and the highest February total on record.

During this two-month period the planning of new construction work has continued at an amazing rate, both January and February showing plans filed

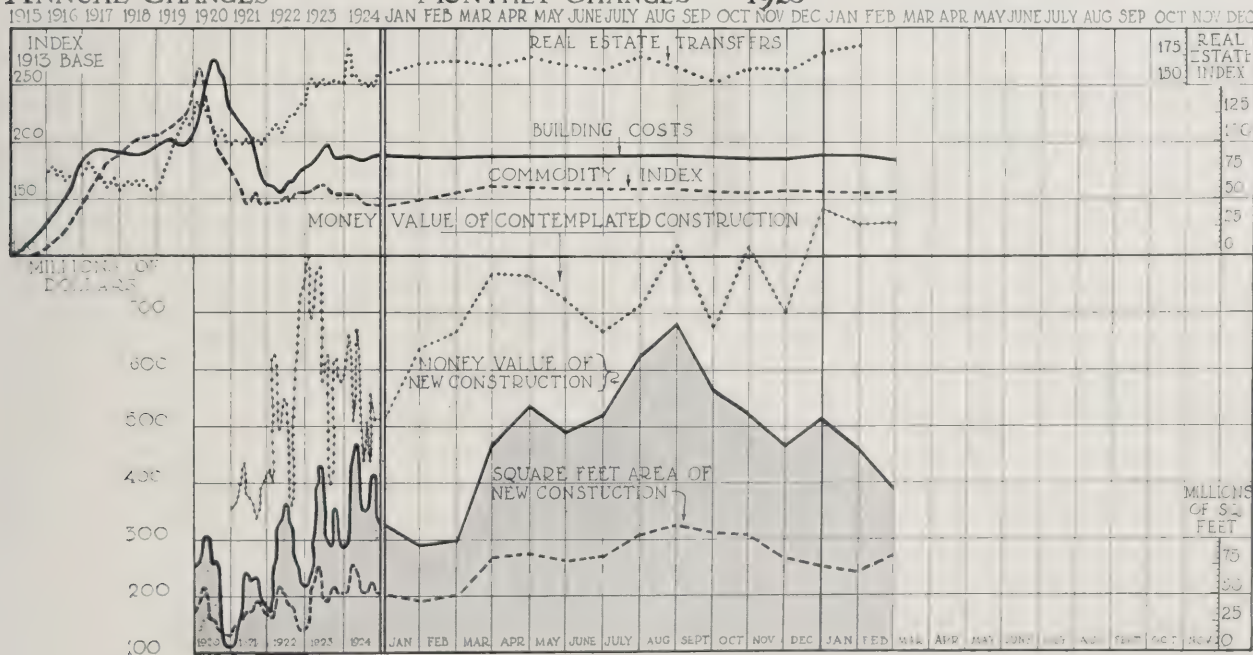
amounting to nearly \$900,000,000 and being in each instance approximately 25 per cent greater than the value of plans filed in January and February of 1925. In other words, during the first two months of 1926 construction activity has been continuing at a rate which is at least 25 per cent greater in both actual contracts let and plans filed than during the similar period of last year. It is anticipated that this momentum will continue, and the question at this time is what will be the measure of the second wave of activity which develops in the fall.

The general trend of building costs is somewhat problematical, because it is varying considerably in different localities. The average wage in the skilled building trades has been climbing slowly upward during 1925; the cost of materials has been generally decreasing; the average cost of building construction for the first two months of 1926 is slightly lower than at the beginning of 1925; and the trend of the cost index as shown in the accompanying chart is very gradually going downward, and will probably continue to do so for some years to come.

ANNUAL CHANGES

MONTHLY CHANGES

1925



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs*. This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index*. Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction*. Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record*. (4) *Money Value of New Construction*. Total valuation of all contracts actually let. The dollar scale is at the left of the chart in millions. (5) *Square Foot Area of New Construction*. The measured volume of new buildings. The square foot measure is at the right of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined, first by the trend of building costs, and second, by the quality of construction.

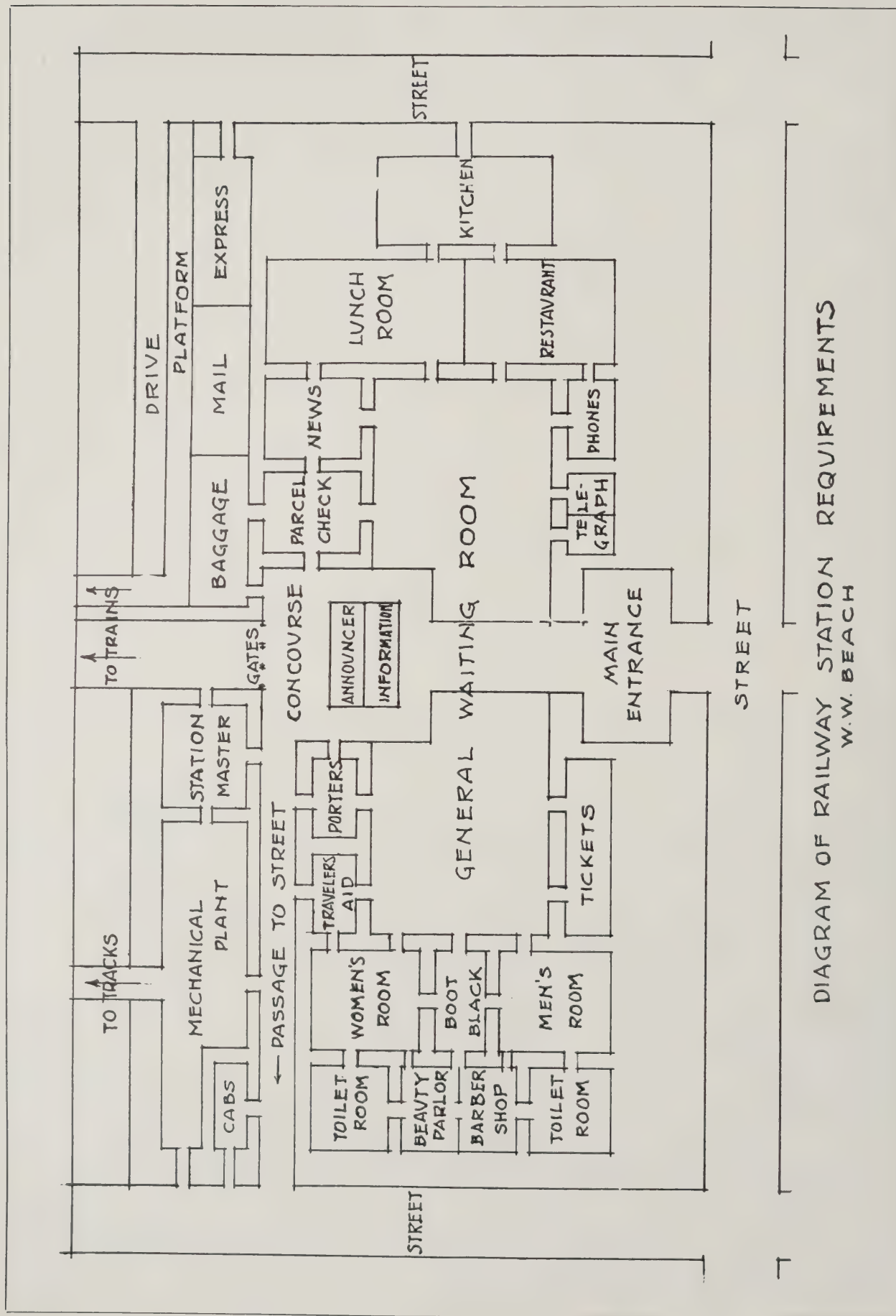


DIAGRAM OF RAILWAY STATION REQUIREMENTS
W.W. BEACH

SMALL BUILDINGS

Railway Stations of Moderate Size

By W. W. BEACH

THESE comes a time when the disreputable old "deepo" is to be replaced by a modern passenger station. Regardless of whether the new structure is to be large, small or simply "medium" in size, it is probably no exaggeration to say that the proposition presented to the architect involves the solution of as great a number of special problems as could possibly be related in any given project of equal cost. And the addition of a few hundred dollars to the appropriation is quite as likely to mean added facilities as it is to imply simply increased size. The possibilities of the station are infinite.

In the design of almost any other class of building, the architect finds his requisite data easily available, either from his own past performances or from the client himself. But, in planning the layout of a railway station, his sources of information are so many and his data from them so meager and vague that he must needs get in and dig with his own implements, if he is to even approximate the ideal solution at which he aims. He first receives the engineer's survey of the station grounds, together with a statement of the amount appropriated for the building. Both of these are supposedly absolutely inelastic. But the architect can no more be sure of this than he can of any other feature of the project until the building is finished, if ever. Nothing is more elusive.

Inasmuch as the chief engineers' forces in all the larger railroad organizations include architectural squads, it will be more than likely that its own architect has studied over the situation to some extent,—and it is quite probable that he has been afforded no facilities for a real study of it. He has been compelled to do with such information as the engineers deemed sufficient and as he could derive by a visit to the site, without being permitted to carry on anything like a thorough survey or analysis. The result of his endeavors may or may not be made accessible to the outsider to whom the commission is finally awarded—and it may or may not be of value, if available. In either event, the architect must himself make a most thorough canvass, must carefully check what is given him, or must originate for himself an exhaustive analysis of all collectible data.

Although we are eliminating from our consideration all thought of terminal, union or other large stations, we are by no means reducing the extent of the problem. To begin with, a modern railway station comes within the category of semi-public buildings, and one must ascertain what is being done

or what is proposed in the particular community in the way of "city planning,"—what will be expected of the railroad or railroads to meet the desires of such planners; to what degree it is advisable or possible to tie in with them; whether it is to be a love feast or a fight. Obviously, the architect essaying the solution of a problem of this nature is presupposed to be one of sufficient experience and vision to be deferred to in matters pertaining to city planning and zoning. To this is added an engineering sense which impels him to due regard for his client's limitations, together with the tact that enables him to ably present his views to others. He must not go wild, but must often overcome considerable opposition.

Nearly all present-day passenger station planning has to do directly with elimination of grade crossings. In fact, a great many small and medium sized stations throughout the land are existing in disgraceful obsolescence, awaiting the inevitable day when the adjoining grades must be changed to meet the popular demand for "safety, first, last and all the time." Were a new station built ahead of time in such a location, it would probably be scrapped in a short while; hence the public must put up with a lot, and some of it can't be helped. So, in addition to local building ordinances, one has first to consider the status of the new building in the scheme of the "city beautiful," as well as its practical relation to the near-by streets and tracks and their new levels. It is customary for the company to have its own forces look after all details of temporary facilities during the construction period, whether the new building directly displaces the old or is to occupy a different site; many a new station replaces an old.

In connection with the track layout, one must give due consideration to:—1. How many railroads will use the station. 2. How many tracks are to be served. 3. Whether or not the station is to be (or may be) a division point. 4. Whether the station will be the terminus for any branch line or lines. 5. Whether any passenger equipment, sleepers, diners, coaches, baggage, express or mail cars, will be switched on or off at this point. 6. Whether there is express business in car lots to be taken care of to any considerable extent, etc.,—all important matters.

Items 3, 4 and 5 indicate a demand for coach yard heating, and bear a direct relation to the location of the mechanical plant and its size. It is to be determined if this should be in a separate building, and if it be desirable to include any or all of the baggage,



STATION, SOUTHERN PACIFIC RAILROAD, REDLANDS, CALIF.



WAITING ROOM, REDLANDS STATION



STATION, SOUTHERN PACIFIC RAILROAD, REDDING, CALIF.



WAITING ROOM, REDDING STATION

mail and express facilities therewith. Coach yard heating requires high pressure steam, whereas, without such heating, a small low pressure plant will ordinarily suffice for station heating alone.

Having determined the number of buildings needed; number, location and lengths of platforms; amount of canopy (if any) to be provided, and several other exterior engineering features, one must give the most careful consideration to the direct relation between the main floor of the station and the track level. In general, the main floor will be at street level, either above or below the tracks, as the case may be, and access to platforms will be by bridges or tunnels, to suit conditions. Whether or not it be set down as a requirement, the passageway leading out of the station to its various track branches should invariably be so narrowed at some convenient point as to form an easily controlled throat, both for the purpose of inspecting passengers' tickets and for ease in reviewing those leaving the trains. These are items which may not be deemed important at the time the station is built, but which may readily be found so later on, and in a short time.

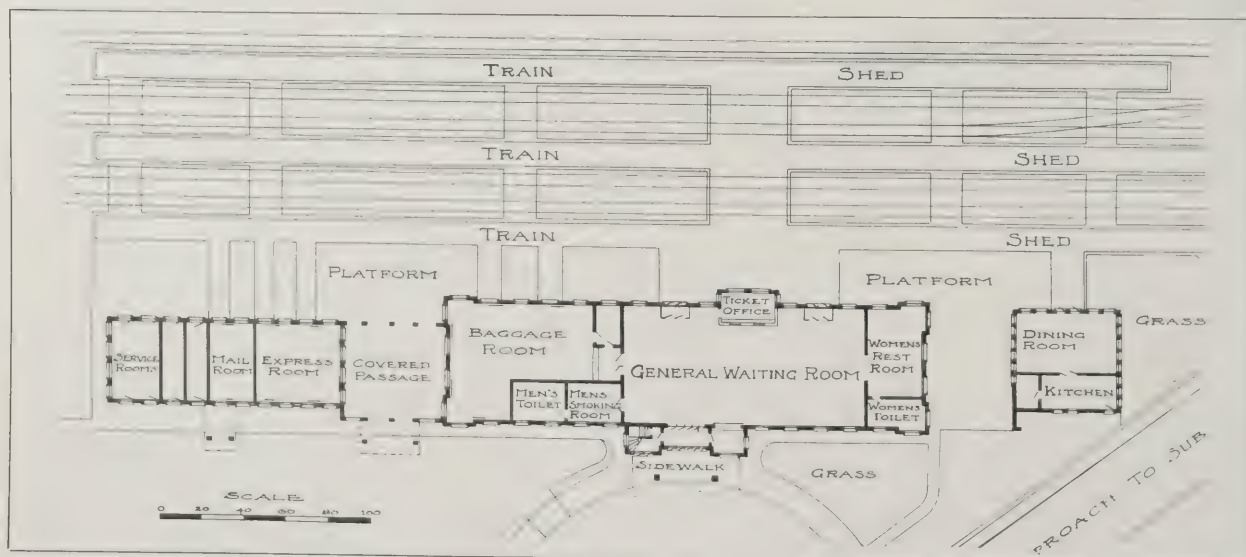
Of considerable importance also is the relation of exits to the cab stand and the parking spaces. These must be designed to offer the least possible chance of friction between the loading and unloading demands of public cabs, buses and private vehicles. If feasible, public and private conveyances should be made to use widely separated curbs. If the station happens to be in a business center where parking limitations prevail, one must see that private parking areas are provided, with due segregation of cabs, private cars and trucks. All driveways must be ample, and especially the truckways for serving the station's facilities. Attention should be paid to lunch room and kitchen deliveries and ash and garbage disposal. Delivery men should not be compelled to thread their way through waiting or moving mail and express trucks in order to leave the highly im-

portant makings of "ham and" at the kitchen door!

Having given due regard to all phases external to the building, and having acquired something of an idea of what a plan synthesis will produce, one is quite likely to discover that the client's plot is entirely inadequate for the intended purpose. This is, of course, most likely in a congested district, where additional realty is expensive and hard to obtain. If, in such an event, the architect makes a stand for his plan's necessities, he may cause the project to be hung up for months or even years, with the attendant possibility of a change of site (or architect!) and the development of a bitter local controversy. Verily must one proceed with the utmost caution, and with due regard for every phase of the situation!

To a certain extent, one can increase the usable area by adding to the number of stories, but a railway station is peculiarly a thing of one or two levels, unless these happen to be sufficiently far apart for the introduction of an intermediate story, in which case there comes in the need of additional expense to provide ample elevators to afford easy access to all floors. The traveling public will traverse the full length of a 14-car train or the magnificent distances in some of our great new stations without over-much grumbling, providing that the going is all in a horizontal plane—or nearly so. Hence the success of the ramp in stations, first used, to any considerable extent, in the Grand Central Terminal in New York. But the traveling public, more than any other "public," includes a great number of people with defective underpinning, who, by reason of temporal exigencies, are driven to journeying. These must be cared for with the least personal discomfort. They have been conceded the right of choice between stairs, ramps and elevators, and the architect must bow before that concession. The public must be catered to.

We now come face to face with the real problem,—the design of the station building proper. A complete survey of all requirements, both for today and



Plans, Station Buildings, Chicago, Burlington & Quincy Railroad, Galesburg, Ill.

Henry Raeder, Architect

with proper regard for those of several years in the future (such a station should be counted upon to serve for at least 40 years), affords the needed data as to space requirements of the major features, as shown graphically in the accompanying diagram. Some of these items, essential in most stations, are omitted entirely in the smaller buildings.

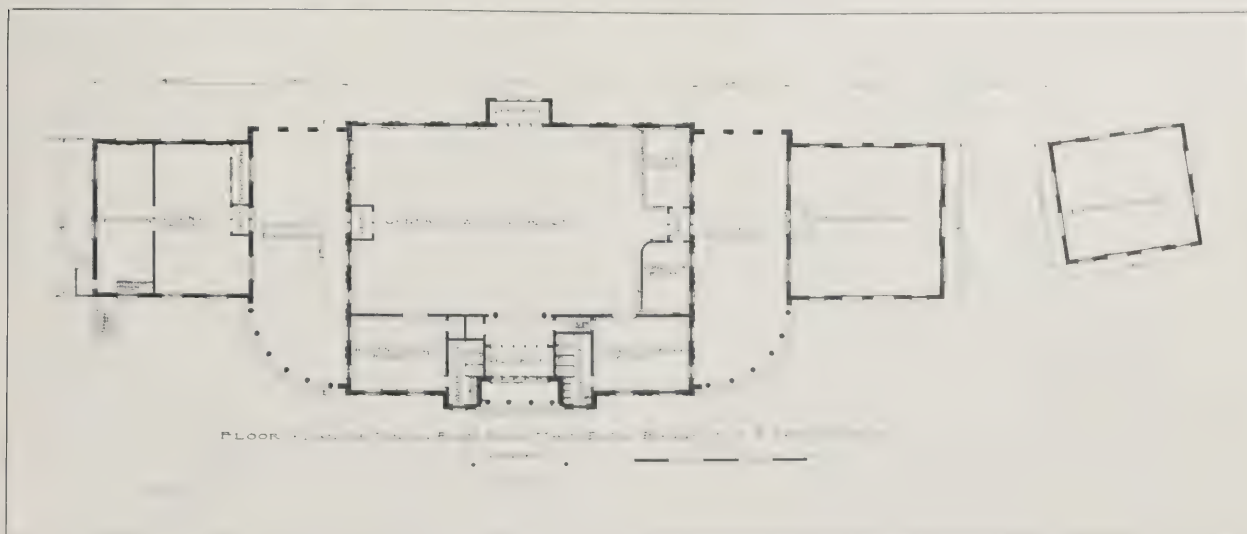
Such a diagram provides a helpful means of correlating one's necessities and condensing them into the space available. No provision is made in the diagram for certain things that are sometimes introduced into the program, such as office rooms, hotel rooms, shops or stores, etc., which would only further complicate the study. Still further difficulty is likely to be encountered by the irregularity of site, so common to railroad property, and difficult to handle.

Again, if one be working south of Mason and Dixon's time-worn Line, one is committed to a complete segregation of white and colored passengers and of all the personal facilities pertaining to them. This forces duplication of waiting rooms, lunch rooms, etc., which, under these conditions, are generally ranged on two sides of the ticket offices, baggage checking, news and like concessions. If possible, a common kitchen will be found sufficient for all needs, which of course contributes to convenience.

But, to return to our diagram. The hub of the building is the general waiting room, around which are grouped, to such an extent as space permits, all those features to which the traveler demands easy access. The distance from the street to the train gate should be the shortest possible, to accommodate to the maximum that belated individual who has allowed himself insufficient time. This applies also to the distance from the ticket window to the gate; and the parcel check room should be en route to the same point. The use of other facilities by patrons implies their possession of time necessary to the purpose; hence the more important of these, the retiring rooms and eating rooms, can be at ends of the longer axis.

That the information desk should be centrally located has come to be an accepted fact, as witness the change to such position now being wrought at the Pennsylvania Station in New York. Even in medium sized stations, the information section should be well equipped, though in the smallest this function must be taken care of by the agent himself, or by the purveyor of news and cigars, who frequently cares also for parcel checking as well. The "travelers' aid" may be the matron who has general oversight of the entire women's section and keeps an eye out for unattended females and children. She and the porters have one or more wheel chairs available as needed. If it be a division point, the program may call for a "first aid" room. But, in any event, first aid equipment should be handily placed, both for the travelers' aid and the station master. The latter, who may also be the head baggage man, has general charge of the building and mechanical plant and special charge of porters and train announcing. Thus, to the greatest possible degree, the diagram, as varied to meet the needs of the particular problem in hand, will give most careful consideration to the combining of functions while the station is young, since one phase of the flexibility of the plant is that of freely increasing the size of its staff to meet growth in business demands without more than minimum physical changes.

Perhaps one feature of station planning that has heretofore been given undue prominence is the matter of accommodations for male patrons. Although hotels have long since driven these off the main floor, they still occupy most valuable space in many railway stations. That it is desirable to get them off the main floor is being proved by changes now in progress in the aforementioned Grand Central Station where, at a very considerable expense, the men's toilet rooms are being moved from the main floor to the basement. This is especially worthy of note because of the fact that the building in question is probably the best planned of all modern stations of monu-



Plans, Station Buildings, Chicago & Eastern Illinois Railroad, Danville, Ill.

Henry Raeder, Architect

mental size. So, if one be cramped for area, the relegation of the men's rooms to positions under or over those assigned to women is worthy of consideration. It may prove an economical move as well, particularly as to the plumbing. The same is true of the catering departments, especially if the main floor is above the street level. Then restaurant, lunch room, barber shop, news and cigar stand can well be at street level, though the latter concession would need duplication on the waiting room floor. Toilet facilities, being always expensive, must be given the most careful thought. To install an excessive number of fixtures, intended to provide for future needs, is unwise. Either an approximate average should, if possible, be hit upon, or one should simply meet present requirements and provide "roughing in" for later expansion. The matter of pay toilets and their number is to be decided. If there are to be enough to warrant the initial expense, it will be better to use a coin-operating turnstile than the cumbersome nickel-catchers on the doors, too much of the proceeds from which go to the lessees instead of to the company providing the facilities!

But these are only a few of the hundred and one details to be painstakingly worked out. Among others, to be decided either by the architect or for him, are the type of train announcing to be provided; the kind of track signs to be adopted; the sort of parcel checking to be used; the method of refrigeration to be installed for kitchen and lunch room equipment; amount and kind of mechanical ventilation to be supplied; arrangement of elevators on platforms for handling baggage, mail and express trucks; character of platform stairs and the cross-over bridge or tunnel, as the case may be. Railroads are generally on low ground, often close to water levels, and tunnel construction may be fraught with special difficulties, including that of

obtaining thorough waterproofing, capable of withstanding track vibrations under difficult conditions.

We have apparently devoted this article exclusively to a two-level project, whereas our diagram shows everything on one level. Being diagrammatic, however, one is presumed to consider it more particularly as to matters of juxtaposition, access and communication, and quite regardless of level.

Doubtless, railroad companies will continue to erect occasional permanent buildings at grade crossings,—fewer in each succeeding year. These may be served by a single track and present a minimum number of planning problems. If on double tracks, it is up to the company to decide whether the cross-over shall be at grade or above or below it. If, however, the station be at a junction point, with the railroads crossing at two levels, there is still more to think about. The streets may be at a third level, though this is unusual. Sometimes, if the station be planned at the same time as the grade crossing elimination, the architect may have an opportunity of influencing the engineering design to the betterment of the station layout; but he is more likely to be given the latter all "cut and dried" and must, perforce, make the best of it and do his utmost.

In any event, the railway station architect has, in addition to careful study of all the foregoing details, to give due consideration to the ordinary questions of design, construction, materials, and items of mechanical equipment that enter into the makeup of any other building, but aggravated to the *n*th degree in multitudinous circumscribing limitations. In presenting, therefore, the accompanying plans and illustrations of successful railway stations, outside of the monumental class, one feels that those immediately responsible for such successes are deserving of most hearty felicitations. They have done wonders under conditions of the utmost difficulty.



Station, Delaware, Lackawanna & Western Railroad, Mountain Lakes, N. J.

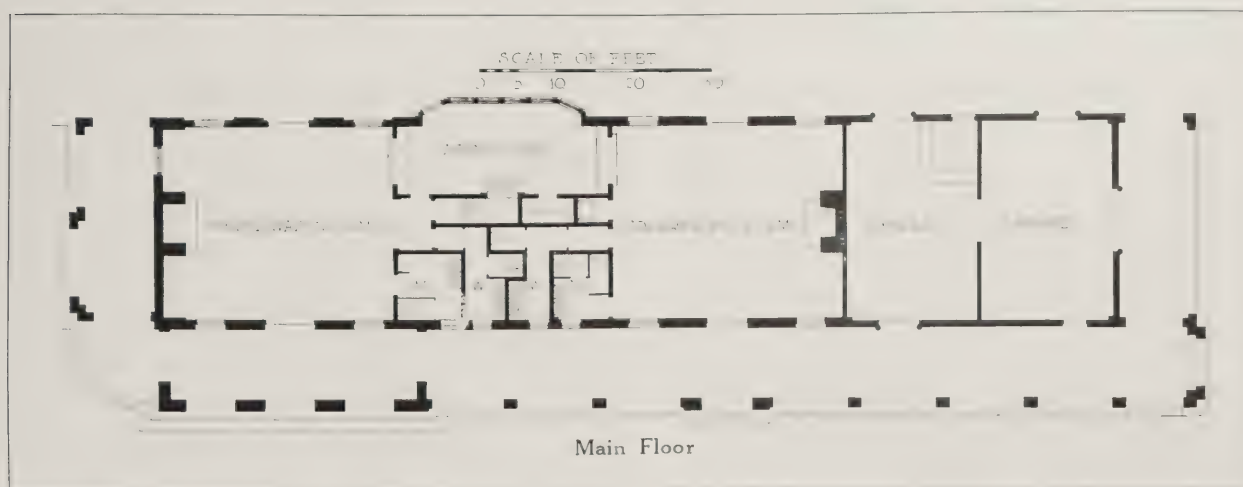


STATION, SEABOARD AIR LINE RAILWAY, WINTER HAVEN, FLA.

HARVEY & CLARKE, ARCHITECTS

IN the construction of the station completed last year at Winter Haven, Fla., stucco on hollow tile was effectively used. In general the design and character of this building successfully suggest the influence of Spanish architecture. There is a certain bold picturesqueness about the outline of the building, with its colored cement striking a pleasant note of contrast to the brilliant blue skies of the sunny South. This color note is further emphasized and the Spanish style still more definitely suggested by the use of a tile roof in varying shades of red. Although the station building covers considerable ground, the fact that most of it is only one story in height gives the general impression of

unpretentious simplicity. Only one quarter of the entire building is carried up into the second and third stories. This is done in a very successful manner by the use of an octagonal tower as a portion of the upper part of the structure. The arcade, which serves as the main entrance to the waiting room for white passengers, casts cool shadows within its arches. Iron balustrades and window grilles assist in producing the desired effect of Mediterranean derivation. The long concrete platforms are protected from both sun and rain by tile-covered roofs supported on piers. On the track side of the station proper the roof protecting the platform rests on heavy cement wall brackets, and is held



FORUM SPECIFICATION AND DATA SHEET—96

Station of the Seaboard Air Line Railway, Winter Haven, Fla., Harvey & Clarke, Architects

OUTLINE SPECIFICATIONS

GENERAL TYPE OF ARCHITECTURE:
Spanish.EXTERIOR MATERIALS:
Stucco on tile.ROOF:
Red tile, old Spanish or Cuban type.WINDOWS:
Wood sash.FLOORS:
Cement and tile; terrazzo in toilets.HEATING:
Open fireplaces in waiting rooms; gas connections elsewhere.

PLUMBING:

Complete toilet facilities with best type of fixtures.

ELECTRICAL EQUIPMENT:

Complete conduit systems; antique fixtures.

INTERIOR MILL WORK:

Finished in enamel.

INTERIOR WALL FINISH:

Plaster, sand finish; modulated plaster in waiting rooms and arcade.

DECORATIVE TREATMENT:

Old Spanish.

YEAR OF COMPLETION:

1925.

by chains fastened to iron bolts in the upper part of the parapet wall of the main station. A greater consistency in the design might have been secured had this portion of the platform protecting roof been covered with tile and constructed in a similar manner to the platform covering at either end of the station. This might have been successfully accomplished by the use of heavy supporting piers or columns, or even an open arcade on the outer edge of the passenger platform next to the tracks.

The plan shows the usual balance found in rail-

way stations used by both white and colored people. The agent's or ticket office is located at the center of the building between the two waiting rooms, as are also the toilet accommodations for men and women, both white and colored. Beyond the station proper are the express and baggage rooms, well shaded by 10-foot arcades. In fact the entire building is surrounded by covered walks or platforms, which help to shade and keep cool the interior waiting rooms as well as to protect waiting passengers from both sun and rain, particularly desirable in a warm climate.



Arcade, Winter Haven Station



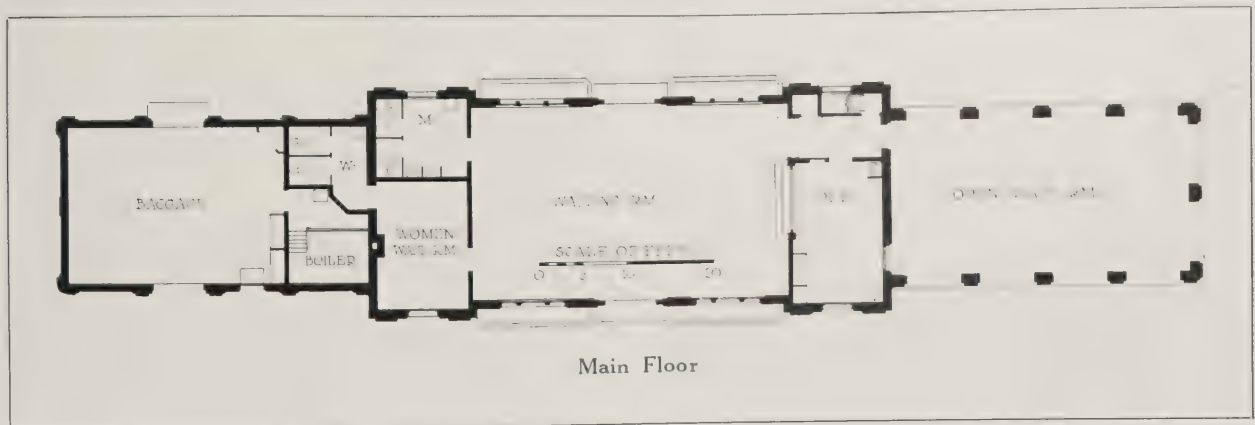
Platform Facade, Winter Haven



STATION, SOUTHERN PACIFIC RAILROAD, SELMA, CALIF.

STUCCO on hollow tile makes an excellent exterior wall material for small railway stations. It adapts itself well to almost any style of architecture which may be appropriately used for this particular type of architectural design. The station at Selma, Calif., although completed eight years ago, illustrates the adaptability of concrete, cement mouldings, and stucco on hollow tile for exterior walls of such buildings. In the design of this particular station, the formal, balanced elevation shows the use of a simple adaptation of Classic architecture. Consistent with the character of the climate in this part of California, the indoor waiting room is only slightly larger than the open-air waiting room, which occupies one end of the build-

ing, balancing the large baggage room, boiler room and women's toilet at the other end. Three large arches, Roman in character, properly suggest on the exterior the location of the general waiting room within. The bays flanking the center arch motif, which have rectangular windows ornamented with heavy entablatures, indicate the location of some of the small rooms within the building, such as the women's waiting room and the ticket office. A short passage connects the general interior waiting room with the open-air waiting room. Off this passage is a public telephone booth and a small staircase leading up to a record room on the second floor. The elevation of the station on the track side practically duplicates the entrance elevation. The only



FORUM SPECIFICATION AND DATA SHEET—97
Passenger Station, Selma, Calif., Southern Pacific Railroad Co.

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Concrete foundation, wood frame and brick veneer. Columns in open waiting room, brick.

EXTERIOR MATERIALS:

Cement base; stucco walls and cornice.

ROOF:

Pitch and gravel.

WINDOWS:

Double-hung; hinged and stationary sash of wood.

FLOORS:

Office, wood; toilets, tile; other rooms, cement.

HEATING:

Steam.

PLUMBING:

Vitreous fixtures.

ELECTRICAL EQUIPMENT:

Light fixtures in all rooms; bracket lights and electric sign on exterior of building. Electroliers on platform.

INTERIOR MILL WORK:

Douglas fir.

DECORATIVE TREATMENT:

Plastered wall and ceiling painted. Waiting room, ornamental cornice and mouldings.

APPROXIMATE CUBIC FOOTAGE:

61,330.

COST PER CUBIC FOOT:

25 cents.

DATE OF COMPLETION:

January, 1918.

variation found is in the introduction of a parcel checking window at one side of the large door opening from the track platform into the baggage room. This station is another good proof of the architectural ability of many members of the engineering staffs maintained by the railways in this country.

As snow seldom comes to this section of California, it is practical to use flat roofs for the main

station building and its wings. Pitch and gravel are used for these roofs. The interior of the station shows a simple treatment of stained wood trim, painted plaster walls and ceiling, relieved by an ornamental cornice and mouldings. The floor is of colored cement marked off to resemble tile. Seven long double benches provide seating capacity for 41 people within the station waiting room.



Waiting Room, Selma Station

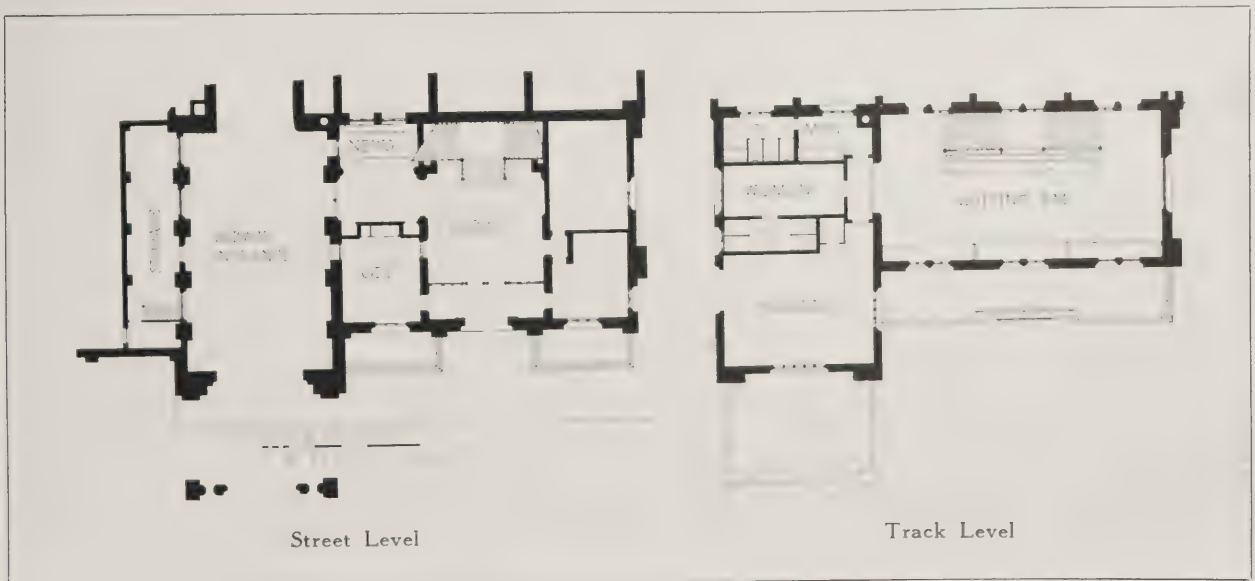


STATION, DELAWARE, LACKWANNA & WESTERN RAILROAD, MADISON, N. J.

F. J. NIES, ARCHITECT

ELEVEN years since it was built might seem to make a building out of date and unworthy of being included in these groups of varying types and styles of small buildings which THE ARCHITECTURAL FORUM publishes each month; but this stone railway station has unusual architectural distinction and character, which make it worthy of belated recognition. On account of the elevation of the tracks of this railroad through the important Jersey suburbs, this station is built on two levels. From the high-

road one enters through a spacious *porte-cochere* into a wide foyer hall which forms the entrance to the subway leading from the inward-bound to the outward-bound station. On this street floor are located a ticket office, a news stand and two large store rooms, and lobby and stairs leading to the waiting room above. Ascending the wide dividing staircase, the waiting room is reached. This is a spacious room, 54 feet long by 28 feet wide, the location of which is clearly and properly indicated



FORUM SPECIFICATION AND DATA SHEET—98
Station, Delaware, Lackawanna & Western R. R., Madison, N. J.
F. J. Nies, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Slow-burning.

EXTERIOR MATERIALS:

Field stone, laid in random ashlar; terra cotta trim.

ROOF:

Graduated slate.

WINDOWS:

Casements; wood sash and frames.

FLOORS:

Red tile on concrete subfloors.

HEATING:

Vacuum system, steam.

PLUMBING:

Vitreous fixtures throughout.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

Oak.

DECORATIVE TREATMENT:

Brick and terra cotta interior; electroplated bronze stair rails, guards, etc.

APPROXIMATE CUBIC FOOTAGE:

190,689.

COST PER CUBIC FOOT:

35 cents.

YEAR OF COMPLETION:

1915.

in the exterior design of the station. From this waiting room access is had to the baggage, smoking and retiring rooms, which are located at one end of the building. In exterior design a suggestion of

English collegiate architecture is found. The steep pitched roofs are terminated against high stone gable ends, the corners of which are reinforced with stone buttresses and are penetrated by arched windows.



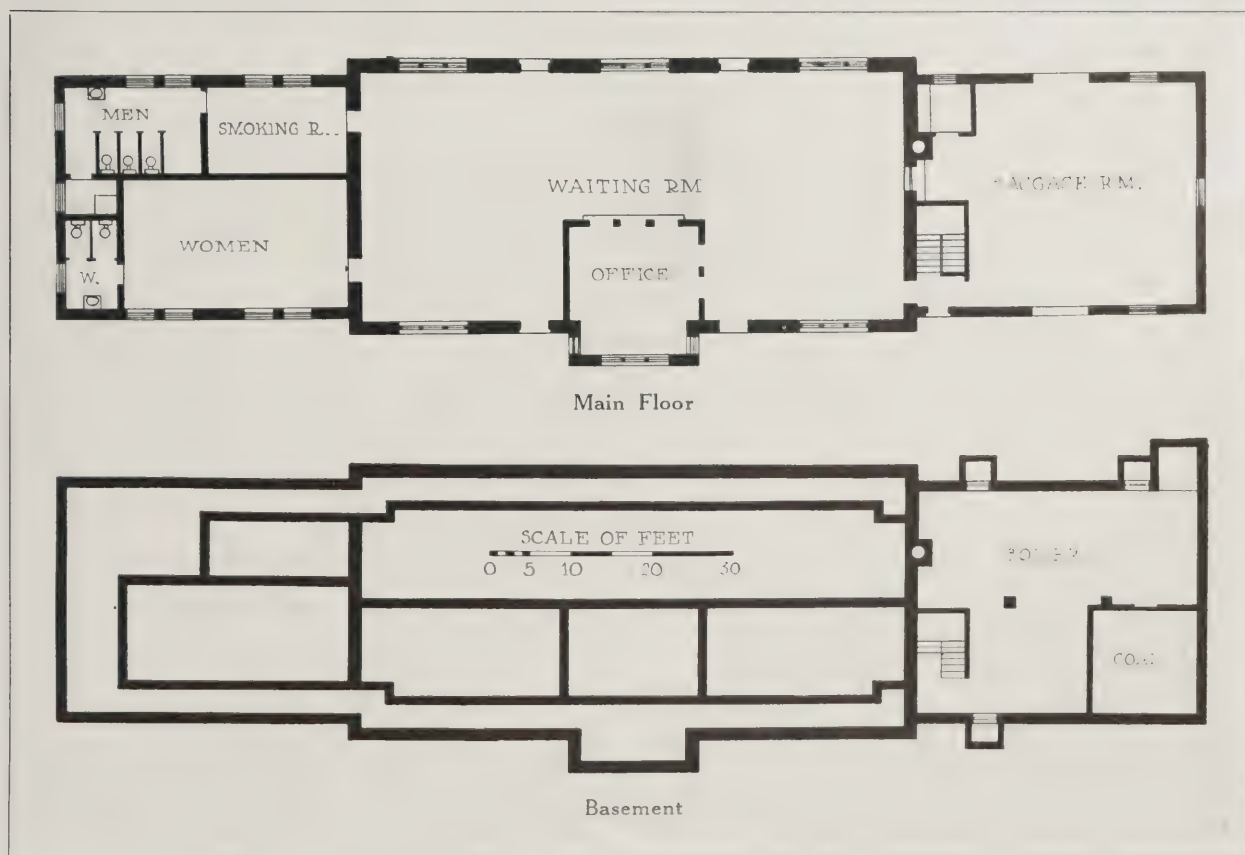
Lobby, Madison Station



STATION, NORTHERN PACIFIC RAILWAY, MILES CITY, MONT.

COMPLETED two and a half years ago, this small station at Miles City is a simple, straightforward design excellently suited for use in a northern city, where light and sunshine are particularly necessary for the interior of the building. Built of face brick in two shades, the lighter of which is used

for the trim, this station possesses a certain quiet repose or refinement which is a tribute to the railroad engineers who designed it. As the winters in Miles City are quite cold, covered platforms are omitted except for the overhang of the low sloping roofs which protect only a small portion of the plat-



FORUM SPECIFICATION AND DATA SHEET—99

Station, Northern Pacific Railway, Miles City, Mont.

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Concrete foundations, brick walls, hollow tile backing.

EXTERIOR MATERIALS:

Face brick in two shades; light shade for trim.

ROOF:

Frame construction with asbestos shingles.

WINDOWS:

Wood.

FLOORS:

Red tile over concrete subfloor.

HEATING:

Low pressure steam.

PLUMBING:

Open sanitary fixtures.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

White oak, stained and varnished.

INTERIOR WALL FINISH:

Painted plaster; tile wainscoting.

DECORATIVE TREATMENT:

Plastered beams in ceiling; brackets on walls with pendants containing "N.P." in red and black.

APPROXIMATE CUBIC FOOTAGE:

131,500, figuring height from bottom of footings to middle of roof.

COST PER CUBIC FOOT:

43 cents, including furniture and equipment.

DATE OF COMPLETION:

November, 1923.

forms without loss of light to the interior of the building. The waiting room, which is 70 feet long by 44 feet wide, is well equipped with many comfortable benches. Two small doors on either side of the main waiting room give access to the station platform as well as to the open square on which one side of the station faces. The plan is simple and direct. At the center of one side of the waiting

room is a large ticket office, 17 feet by 17 feet in size. This room has a bay which projects beyond the line of the building on the track side for use by the train dispatchers and telegraph operators. Here is located the telegraphing apparatus of the building. At one side of the main waiting room is a large baggage room, part of which is divided off for use as an express office and a parcel room.



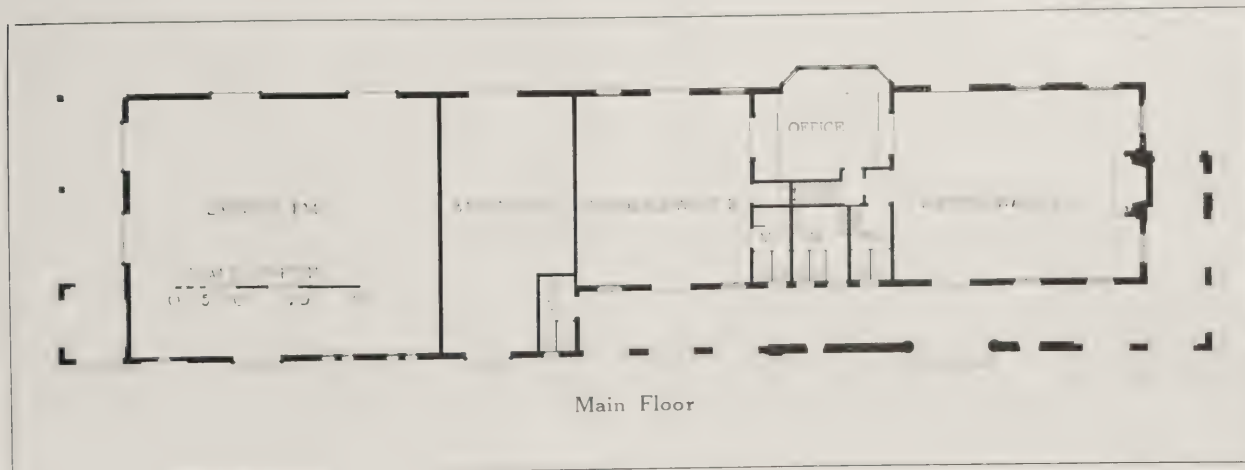
Waiting Room, Miles City Station



STATION, SEABOARD AIR LINE RAILWAY, WEST PALM BEACH, FLA.
HARVEY & CLARKE, ARCHITECTS

IN keeping with the "Mediterranean" style of architecture which has so largely been followed in all of the recent architectural work at Palm Beach, Miami and Coral Gables, this new railway station at West Palm Beach shows the direct influence of Spanish Renaissance architecture in its design. The exterior walls are rough stucco on hollow tile. All of the ornamental architectural details are executed in terra cotta. These details closely follow Spanish

precedent. From careful study of the illustration of the exterior one has the feeling that the care, refinement and beauty of the architectural detail would be more emphasized and set off had the stucco of the walls been less rough and mottled in texture. The Spanish detail of the waiting room for white people is consistent with the detail of the exterior of the building. A vaulted arcade, which extends half the length of the entrance front of the build-



FORUM SPECIFICATION AND DATA SHEET—100

Seaboard Air Line Railway Station, West Palm Beach, Fla., Harvey & Clarke, Architects

OUTLINE SPECIFICATIONS

GENERAL TYPE OF ARCHITECTURE:
Spanish.EXTERIOR MATERIALS:
Stucco on tile.ROOF:
Red Tile, Old Spanish type.WINDOWS:
Wood sash.FLOORS:
Cement and tile terrazzo in toilets.HEATING:
Open fireplace in waiting room; gas connections elsewhere.

PLUMBING:

Complete toilet facilities with best type of fixtures.

ELECTRICAL EQUIPMENT:

Complete conduit system; antique type of fixtures.

INTERIOR MILL WORK:

Finished in enamel.

INTERIOR WALL FINISH:

Plaster, sand finish. Modulated plaster in waiting rooms and arcade.

DECORATIVE TREATMENT:

Old Spanish.

YEAR OF COMPLETION:

1925.

ing, makes a pleasant place to seek shelter from the hot tropical sun. Between the waiting rooms for whites and colored are located the ticket agent's office and toilet rooms for men and women, both colored and white. Beyond the waiting room for colored people is a baggage room and large express room, making a simple and well arranged plan. An

imposing entrance arch leads through the vaulted arcade into the high waiting room for white people. This room is wainscoted with imitation stone to a height of 9 feet. Why the Richardsonian custom of including an ornate chimneypiece and useless fireplace was followed in this railroad station in the tropics is hard to understand, unless as an ornament.



Entrance, West Palm Beach Station



Waiting Room, West Palm Beach Station



STATION AND OFFICE BUILDING, CANADIAN PACIFIC RAILROAD, MOOSE JAW, SASK.

HUGH G. JONES, ARCHITECT

THIS station with its adjoining office building can hardly be termed a small station, yet it is so interesting and well designed that its omission from this group of stations would be a matter of regret. The exterior elevation, which logically and successfully indicates the interior plan, is designed

in a rather free type of Italian Renaissance architecture and is constructed of limestone and red brick laid up with gray joints. Two years were required for its completion, because of the necessity of using existing buildings which occupied the site during the construction of the new station. The size of the



Main Floor

FORUM SPECIFICATION AND DATA SHEET—101

Station on the Canadian Pacific R. R. at Moose Jaw, Sask., Hugh G. Jones, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Reinforced beam and slab concrete.

EXTERIOR MATERIALS:

Limestone and red brick.

ROOF:

Copper.

FLOORS:

Red tile in vestibule, waiting room, ticket alcove, rest room and subway.

HEATING:

Steam.

PLUMBING:

Enameled fixtures.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

Birch, stained.

INTERIOR WALL FINISH:

Tile, brick and enamel.

DECORATIVE TREATMENT:

Waiting room, vestibule, and ticket alcove, gray, tile wainscoting; gray brick walls, moulded and ornamental members in terra cotta. Lunch room, blue-green tile walls and tinted enamel.

ENTIRE COST:

\$625,000.

YEAR OF COMPLETION:

1922.

structure was fixed by the volume of transfer business rather than by the population of Moose Jaw, which is only 19,000. The train service includes three express east-bound trains and three expresses west-bound, and nine locals in and nine locals out each day. There are six passenger tracks and three combination passenger and baggage platforms. The platform adjoining the building is a trucking platform which connects with cross-over platforms at each end of the platform layout. The width of the platform is 18 feet. Passenger kiosks are placed at one side so as to allow trucks transferring baggage to run through. Tracks through and local, are arranged on centers. The platforms themselves are of wood. Umbrella shelters are intended to be con-

structed eventually. The entrance to the station is on the axis of the main street of the town, through the base of the clock tower which is approximately 90 feet high. On the right after entering the station are located public telephones, ticket offices, baggage and parcel rooms and transfer office. Perhaps the chief characteristic of the plan of the station is the location of the information, ticket office, baggage and parcel room at one side and directly accessible from the main thoroughfare through the station from the entrance to the stairs leading down to the subway under the tracks. This excellent plan leaves the main portion of the large waiting room entirely out of the line of traffic and away from drafts coming from the entrance doors.



Interior, Moose Jaw Station



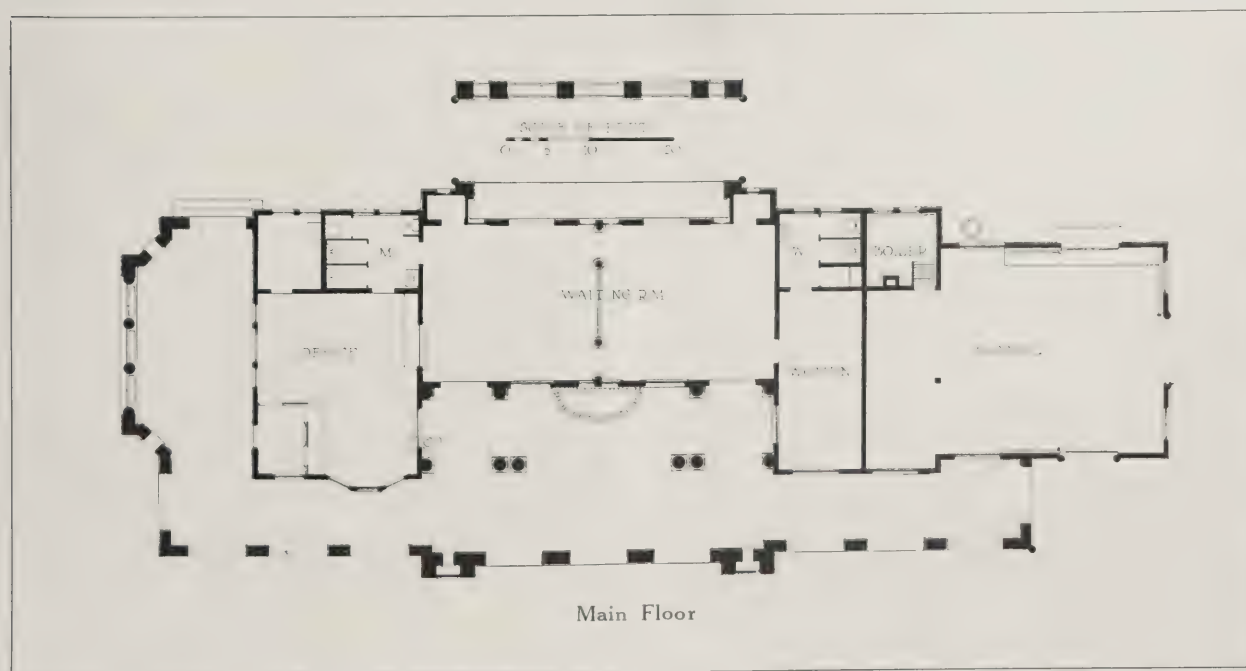
Waiting Room, Moose Jaw Station



STATION, SOUTHERN PACIFIC RAILROAD, PORTERVILLE, CALIF.

SUGGESTIVE of Spanish architecture, this station at Porterville has much to recommend it, in both design and in plan, for use in a semi-tropical climate. The exterior shows a long main building with two low towers, now concealed by vines, and roofs covered with Spanish tile. The building proper is surrounded on three sides by an arcade, which at one end becomes a covered open waiting room or porch to be used in warm weather, bal-

anced at the other end of the building by a baggage room. Between the arcade and the waiting room is an open court which partially lights the waiting room. This room, although small in comparison with the size of the building, is quite large enough to accommodate the comparatively small number of passengers who wish to wait indoors for trains. The plan is well balanced, showing as it does a good sized ticket office, record room and men's toilet at



FORUM SPECIFICATION AND DATA SHEET—102

Station, Southern Pacific Railroad, Porterville, Calif.

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Concrete foundation and wood frame.

EXTERIOR MATERIALS:

Stucco walls and wood gutter.

ROOF:

Terra cotta tile, pitch and gravel.

WINDOWS:

Double-hung and stationary; sash of wood.

FLOORS:

Office, wood; toilets, terrazzo; all other rooms, cement colored.

HEATING:

Steam.

PLUMBING:

Vitreous fixtures.

ELECTRICAL EQUIPMENT:

Light fixtures in all rooms; exterior bracket lights; fans in office and women's retiring room; electric signs and electroliers on platform.

INTERIOR MILL WORK:

Douglas fir.

DECORATIVE TREATMENT:

Plastered wall and painted ceiling. Waiting room, beam ceiling.

APPROXIMATE CUBIC FOOTAGE:

74,800.

COST PER CUBIC FOOT:

17 cents.

DATE OF COMPLETION:

July, 1914.

one end of the building, and a women's retiring room, toilet, small boiler room and good sized baggage room at the other end. The entrance side of the station shows a long *porte-cochere*, which is a welcome protection during the rainy season of the year. The provision of benches in the outside waiting room and arcade might well be adopted in our northern stations where the covered platforms seldom have any seats at all for the accommodation of travelers who prefer fresh air to the overheated, vitiated atmosphere of the average railway waiting

room. To keep down the cost of this building, the construction is of the simplest and most inexpensive type. Not only the exterior arcades but also the main building itself is constructed of wood covered with stucco on wire. The complete concealment of architectural details by vines is certainly open to criticism from the architectural as well as the artistic point of view. Vines trimmed back within reasonable limits soften and beautify architecture, but where they are allowed to completely cover the architectural details, their use is open to criticism.



Waiting Room, Porterville Station

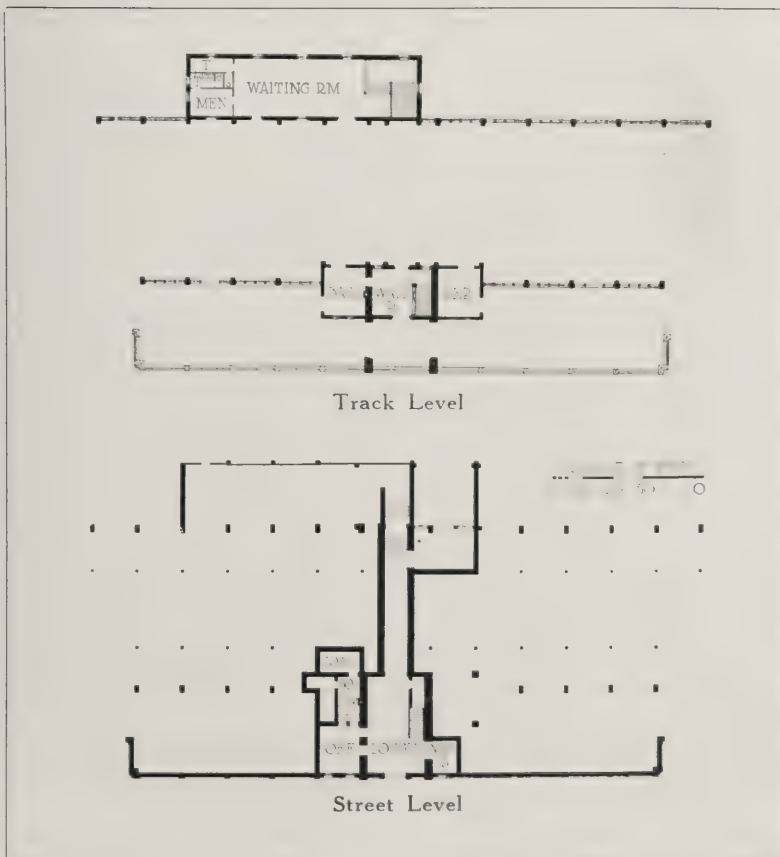


The Arcade, Porterville



STATION, DELAWARE, LACKAWANNA & WESTERN RAILROAD, BLOOMFIELD, N. J.

F. J. NIES, ARCHITECT



ALTHOUGH completed many years ago and very familiar to all commuters to this part of New Jersey, the little station at Bloomfield is still recognized as one of the most unique and interesting small stations in the suburbs of New York. On account of the elevation of the tracks at this point it is necessary to enter the building from an entrance on a level with the station, which is some 14 feet below the station platform. In reality the station consists of two buildings, one on each side of the track bed. Each building contains a waiting room. The building on the outward-bound side of the track bed has a large *porte-cochere* on the level with the waiting room, express office and baggage room. This *porte-cochere* accommodates the vehicles which reach this level by the ascending and descending drives at either end of the station. The macadamized terrace on this level is used as a carriage stand. It is also possible to enter this outward-bound half of the station by means of a stairway leading up from the lower or street level.

FORUM SPECIFICATION AND DATA SHEET—103

Station, Delaware, Lackawanna & Western R. R., Bloomfield, N. J.

F. J. Nies, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Reinforced concrete, semi-fireproof.

EXTERIOR MATERIALS:

Concrete.

ROOF:

Green tile.

WINDOWS:

Casement, wood sash and frame.

FLOORS:

Terrazzo and tile.

HEATING:

Steam.

PLUMBING:

Enamel fixtures.

ELECTRICAL EQUIPMENT:

Lighting and elevator.

INTERIOR MILL WORK:

Oak.

DECORATIVE TREATMENT:

Rough plaster.

APPROXIMATE CUBIC FOOTAGE:

212,958.

COST PER CUBIC FOOT:

28 cents.

YEAR OF COMPLETION:

1910.

In this lower part or basement of the outward-bound station are ticket office, newspaper room, boiler room and space for the storage of coal. From the entrance loggia on this floor a passageway 12 feet wide leads under the tracks to the inward-bound half of the station on the opposite side of the tracks. The inward-bound station may also be reached from the street level by means of an en-

trance which opens directly into the passageway under the tracks, from which stairs lead into the inward-bound waiting room. The plan is made practical and convenient by the introduction of a passageway under the tracks connecting both halves of the station. No particular style of architecture can be named for the building, although its rough stucco walls and tile roofs slightly suggest Spanish influence.



Portico at Track Level Entrance, Bloomfield Station

DECORATION & FURNITURE

The Dauphin's Bedroom, Compiègne

By C. HAMILTON PRESTON

THE Palace of Compiègne, ever a favorite residence of the monarchs of France, has already been illustrated in these pages, and the bedroom of Napoleon, a room selected by him from the Louis XVI suite for his very own, has already been published, together with measured drawings.

The Palace, a creation of the great architect Gabriel, is justly celebrated as being one of his best works. In plan it is triangular and unique. On the entrance side toward the town it is three stories in height, whereas on the garden side there are but two, a huge terrace wall effecting the transition so that it is hardly apparent. A stylobate was designed for the garden side to give the proper height to that facade, the approach being arranged with a long flight of steps. Napoleon, however, disliking the steps, had them removed and replaced by a ramp, a change which has affected very disastrously the original proportions of Gabriel, designed with consummate skill.

One enters through the famous colonnade which forms a screen across the forecourt, crosses the spacious rectangular court, and comes to the main entrance which opens directly on a long, narrow, vaulted hall carrying across the entire front. Leading from this is the grand staircase, of beautiful Louis XVI design, which leads to the large Hall of Trophies above, a room superb in proportions but nondescript as regards architecture. At either end of this room are doors leading to the two wings of the Palace, the door on the left leading to a room most ingeniously planned in that it forms the transition between the two facades; that on the town side and that on the garden side, which are at a curious angle with each other. This is so cleverly done that one doesn't realize at all that the plan is triangular; also that we now are on the *premier etage* of the town side but the *rez de chaussee* of the garden side. Next comes the superb dining room, of which we shall have drawings later on,—a room exactly on axis with the superb vista of the garden, which seems to stretch away for miles, a vista which is very like that of Versailles, except that instead of being open at the end, it is closed by low hills. We now enter the suite of rooms of which the subject of our sketch is one, all opening on the garden, and each commanding a charming view which adds much to its interest.

This suite of rooms, created by Louis XVI for Marie Antoinette, consisted of several very large and stately rooms occupied by the queen herself. All these rooms are huge in size and most sumptuous in

decoration. Opening from these apartments came a series of small and intimate rooms, occupied by the friends and various attendants of the queen. The first of these smaller rooms, opening directly from the boudoir of the queen, was this charming little bedroom of the dauphin, who came to such a tragic and untimely end during the Revolution.

This room is most unusual in its proportions, being very long and narrow. These proportions, however, are not apparent to the eye, since the canopied bed of the little dauphin was placed at the far end of the room, thus reducing the extreme length of it. The mouldings of the room are much the same in nature as those of the rooms already published, and are bold and vigorous. Wherever ornament occurs in the members, it is kept flat and has that almost incised quality which is so characteristic of all the Louis XVI detail at Compiègne. This applies to the cornice as well, which is also vigorous in scale and elaborately ornamented, yet at the same time simple.

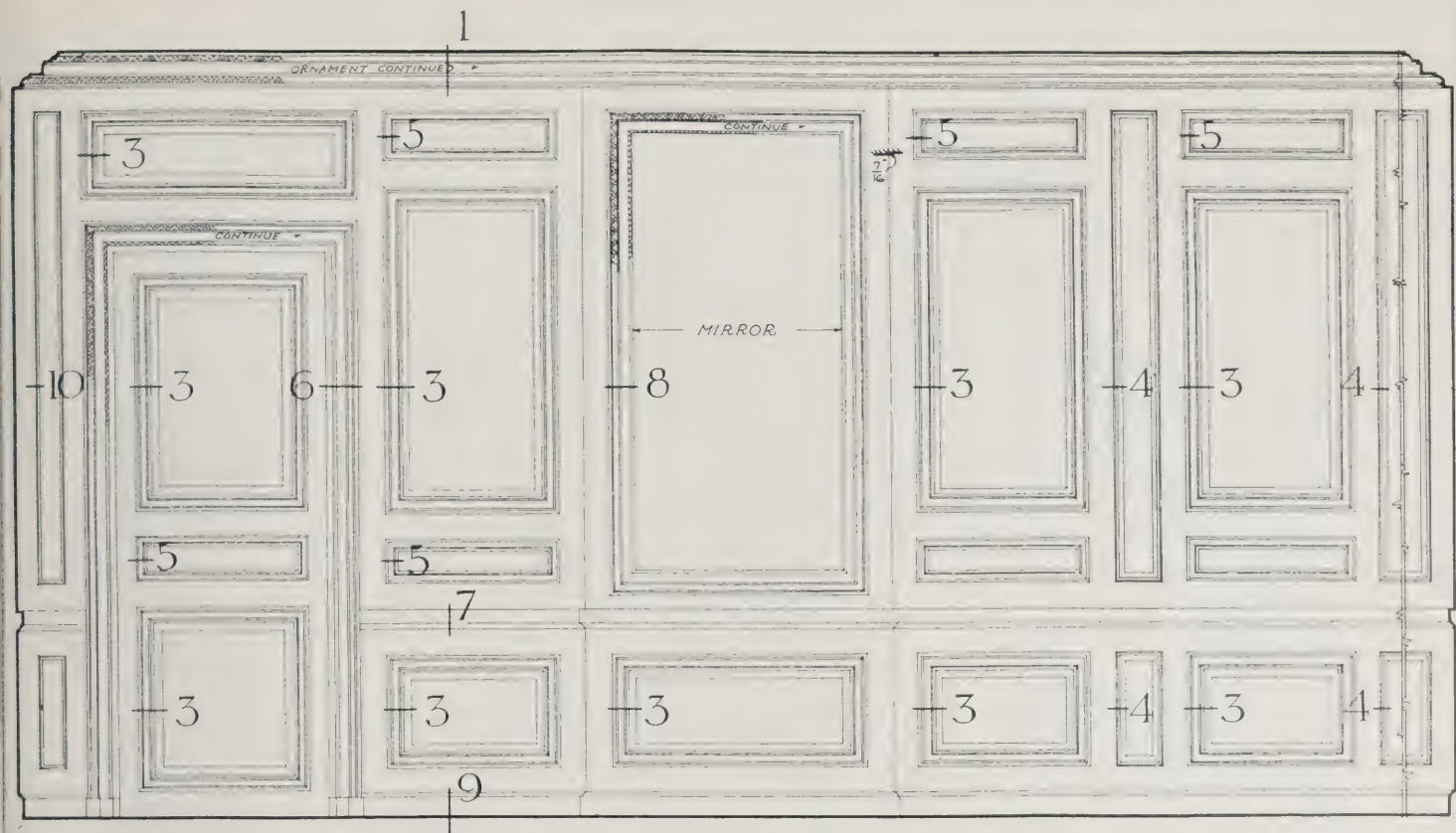
The paneling is symmetrical, and the balance of larger and smaller panels is strictly maintained throughout the room, the smaller panels having a correspondingly smaller moulding. The architrave of the window is notable, the wider portion (beautiful in detail) carrying to the cornice, and only the inner member (the egg and dart moulding) mitering around and carrying across the top of the window under the cornice. This same architrave is used in the many small rooms of this suite; only the detail of the central band is varied. It is in every instance exquisite in design and modeling. The mantel is a typical Louis XVI design, but unusually good in scale. Of dark rose, gray and white marble, it gives an especially beautiful color note in the room.

The paneling, with its absolute symmetry and balance and its soft gray color treatment, forms an especially attractive background for the color scheme of the room. The curtains, canopy and covering of the bed and chairs are of a very delicate blue; the simple decorations of the mantel and one or two well placed pictures against the gray of the walls combine to give an effect of delicacy and lightness which once seen is never to be forgotten. The little bedroom of the dauphin never fails to impress the beholder as one of the most satisfying of rooms as to architecture and decoration. Like several other rooms included in this series of measured drawings, this possesses characteristics, such as dignity, reserve and great refinement, which render it appropriate for modern use.

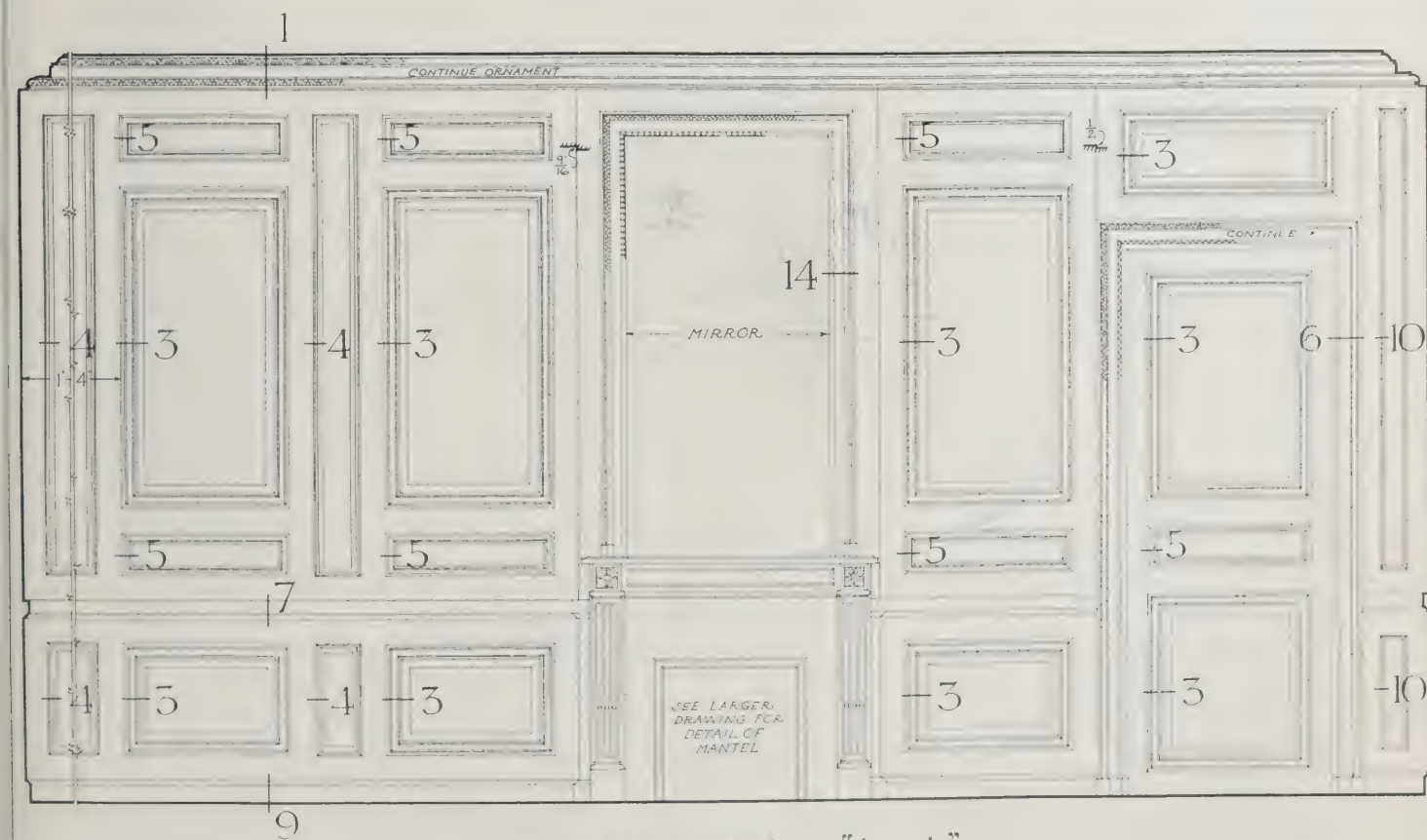


Photos. Paul J. Weber

DETAIL, THE DAUPHIN'S BEDROOM, COMPIEGNE
THE FORUM STUDIES OF EUROPEAN PRECEDENTS



ELEVATION "B~B"



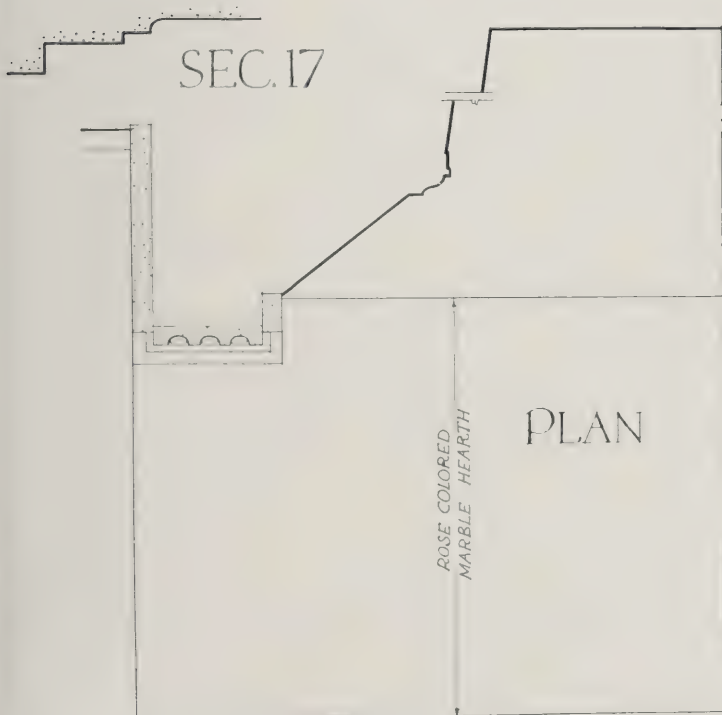
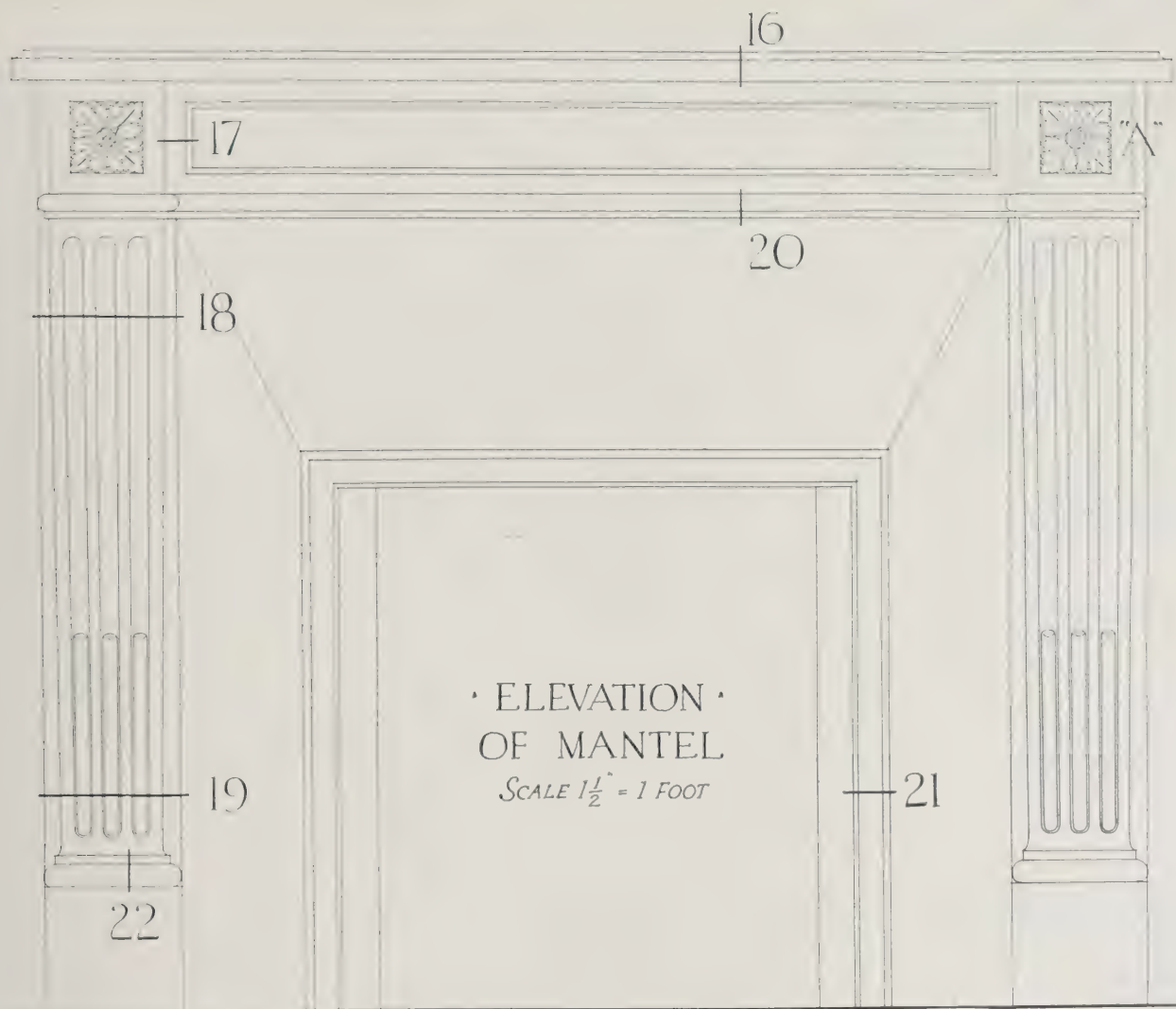
ELEVATION "A~A"

Scale $\frac{3}{8}'' = 1 \text{ Foot}$

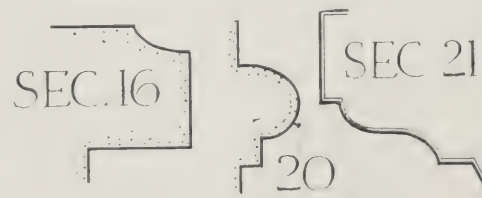
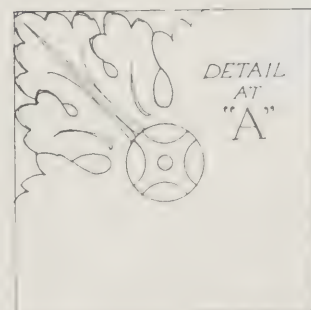
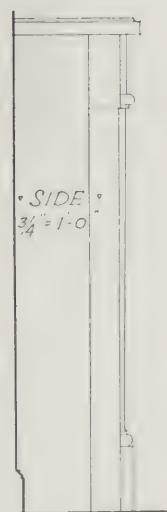
DAUPHIN'S BEDROOM
COMPIEGNE



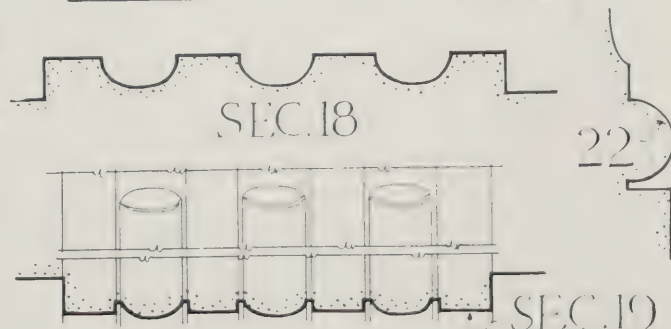
MANTEL, THE DAUPHIN'S BEDROOM, COMPIEGNE
THE FORUM STUDIES OF EUROPEAN PRECEDENTS

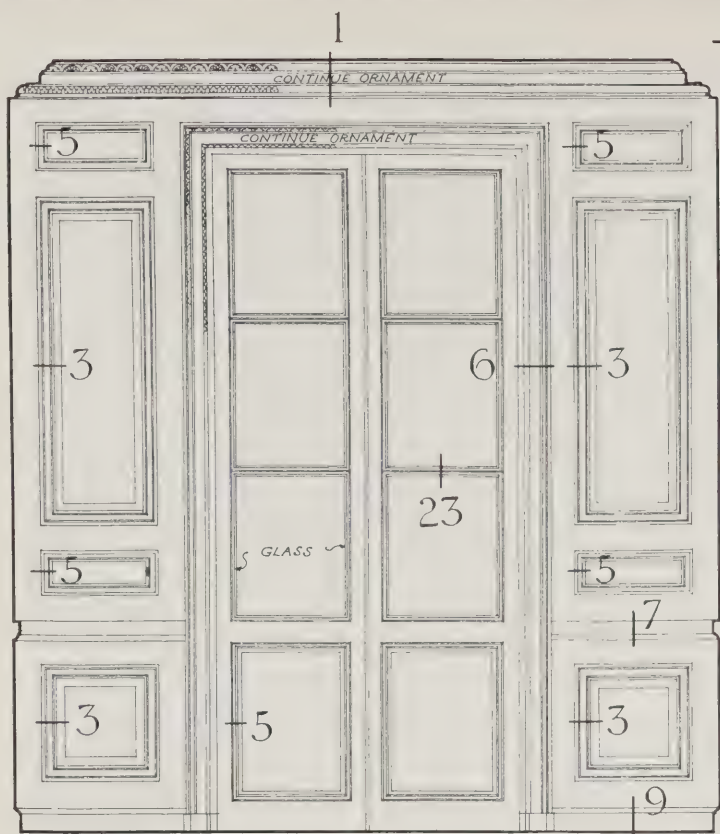


DAUPHIN'S BEDROOM
COMPIEGNE



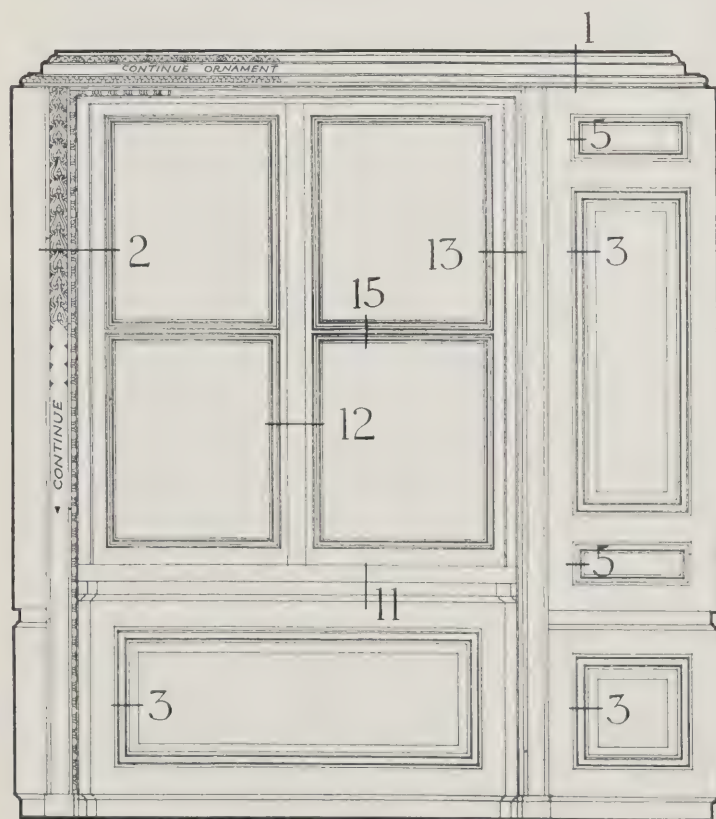
SEC. 21





ELEVATION "D~D"

SEC. 2



ELEVATION "C~C"

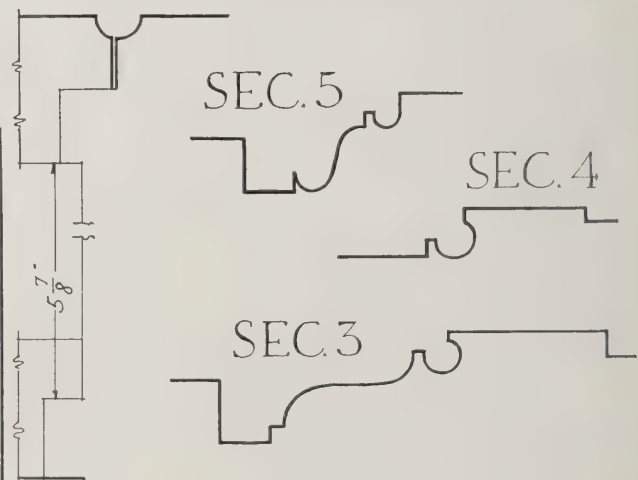
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DAUPHIN'S BEDROOM
COMPIEGNE

SEC. 5

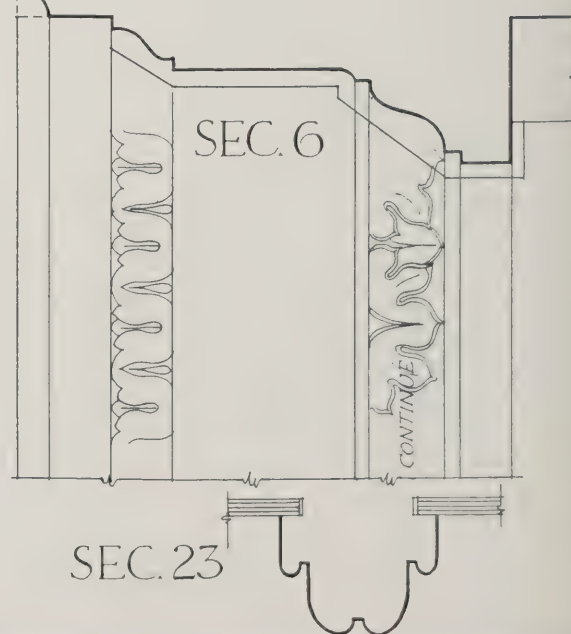
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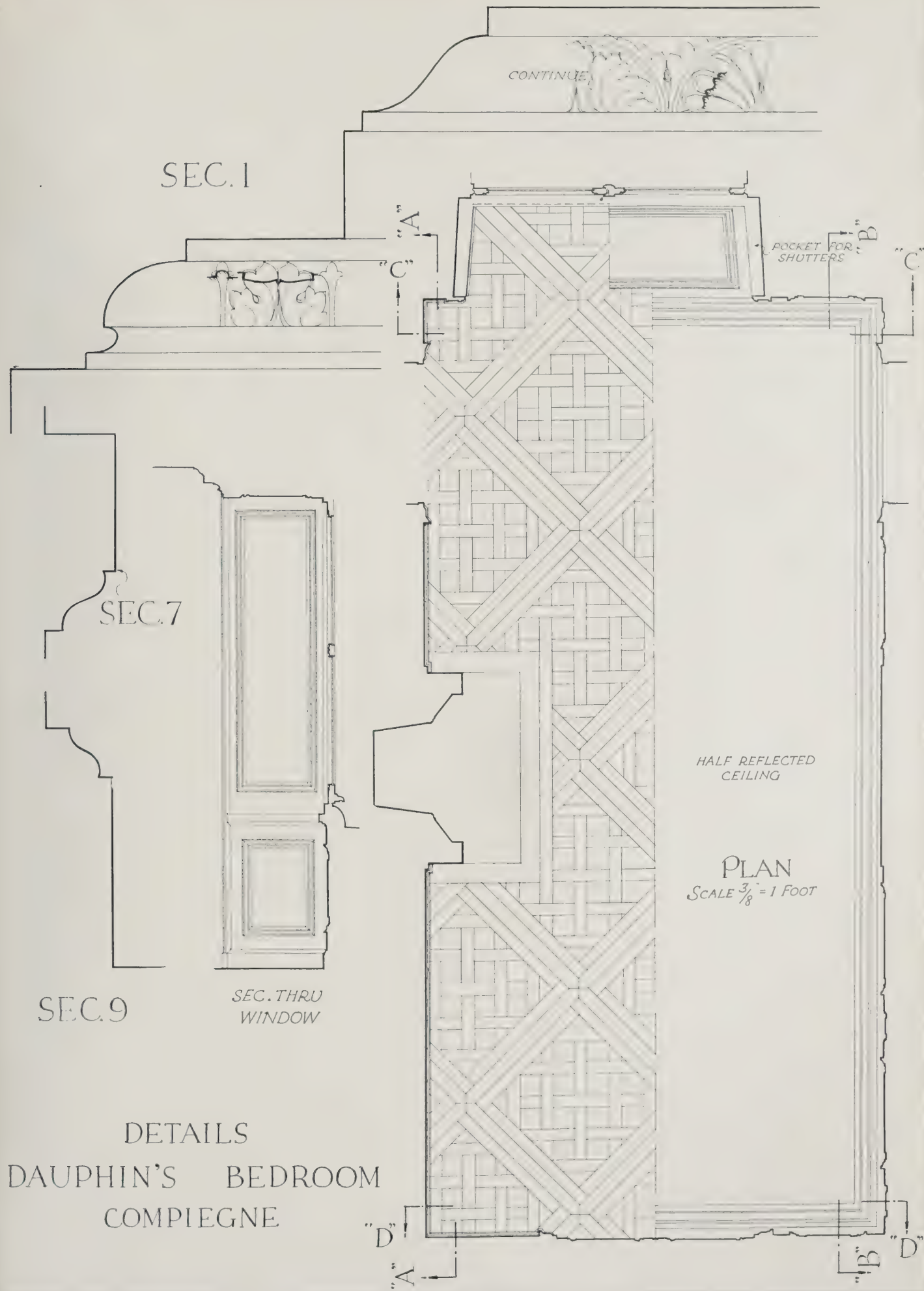
SEC. 3



SEC. 6

SEC. 23

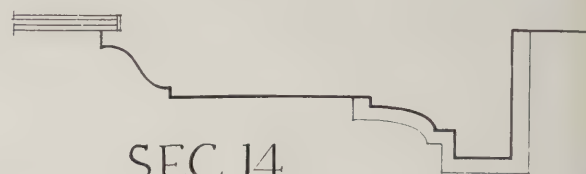




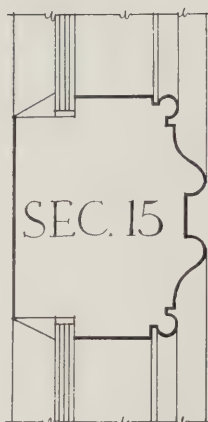
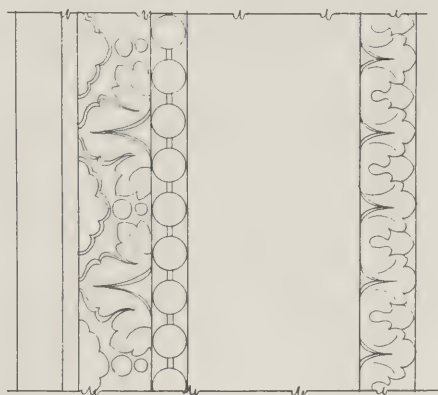
DETAILS
DAUPHIN'S BEDROOM
COMPIEGNE



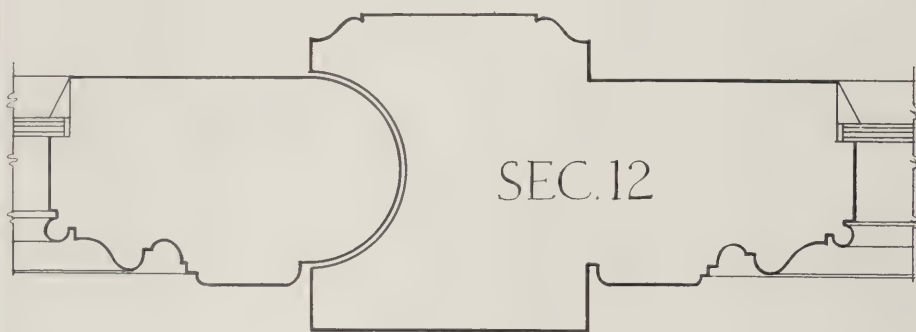
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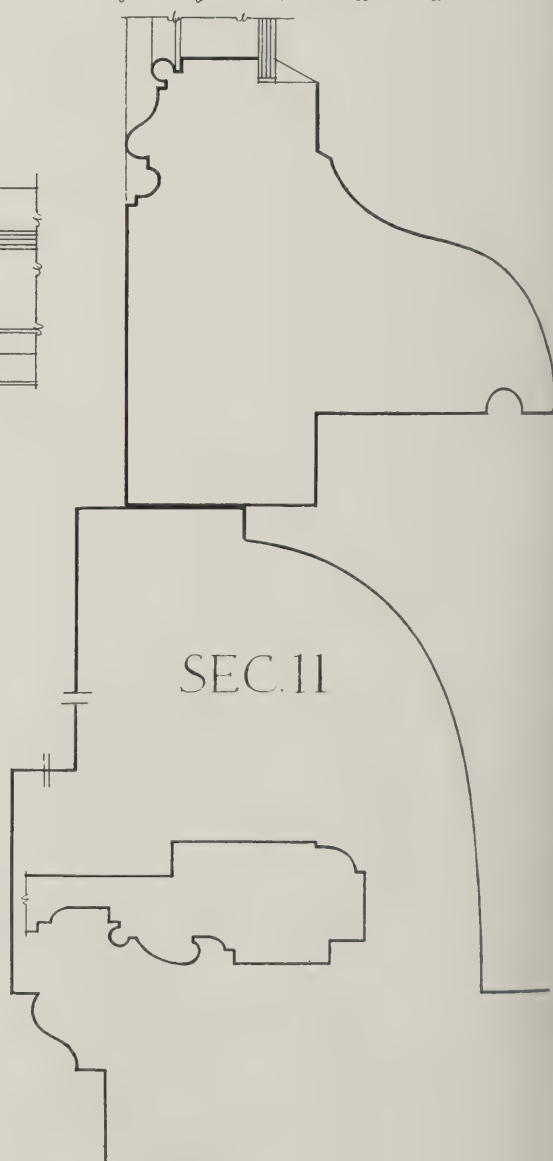
SEC. 15



SEC. 12



SEC. 13



SEC. 11



▼ SECTION THRU SHUTTERS ▼

FULL SIZE DETAILS
DAUPHIN'S BEDROOM
COMPIEGNE

REC'D
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THE ARCHITECTURAL FORUM



MAY
1926



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SOUTHEAST TRANSEPT, LIVERPOOL CATHEDRAL

FROM AN ETCHING BY LOUIS C. ROSENBERG

The ARCHITECTURAL FORUM

Volme XLIV

MAY 1926

Number 5

The Liverpool Cathedral

SIR GILES GILBERT SCOTT, *Architect*

By H. G. BIRNSTINGL

IN looking back over the last hundred years, those who believe that architecture affords a reflection of contemporary life might find some justification for thinking, as so many do, that the Church of England is divorced from contemporary thought and activity, for during that period the Church has persistently sought to express itself in terms of Gothic architecture. But true Gothic architecture was the un-self-conscious and spontaneous outcome of certain conditions, beliefs, modes of thought and social organization, as too of available knowledge and materials. Today all these conditions are completely changed, and to continue imitatively to use these architectural forms, to preserve intact the whole paraphernalia of a past mode of expression, is to divorce

architecture from life, is to create an anachronism, is to be guilty of an affectation, to disregard propriety.

The heated Battle of the Styles of the last century ended in a compromise, by means of which the Classic idiom was accepted for secular buildings, and the Gothic for ecclesiastical; but whereas the Classic has been, except for a brief period of archaeological correctness, freely handled, reflecting the temper of the times and remaining subservient to requirements, being now refined and delicate, now coarse and vulgar, now austere and now sumptuous, according to its purpose and the spirit of the age, Gothic has, for the most part, under the heavy, restraining hands of those in supreme ecclesiastical authority, aimed throughout at correctness. In this respect Liverpool



Photos, Stewart Bale, Liverpool

Perspective Drawing of Liverpool Cathedral Completed

Sir Giles Gilbert Scott, Architect

L
BY



The Choir Looking East, Liverpool Cathedral

Cathedral constitutes a break with the past, and it may be that it is indicative of a *rapprochement* between religion and life. It must be remembered that whereas before the Renaissance the great churches were an impersonal expression of the age, Liverpool Cathedral is personal; there is nothing fortuitous in its growth; it has been conceived as a whole by one man. And this has resulted in a balance and a unity which are scarcely ever to be found in any product of the great mediæval church builders. Unity and balance are Classic characteristics, for in Classic

architecture the whole is always greater than the part. It is this Classical quality of unity that has struck every intelligent observer of Liverpool Cathedral as its outstanding characteristic. Those who strove in the famous Battle of the Styles were separated by differences of outlook which seemed irreconcilable. Those who delighted in analogy, in symbolism, who wished this building to express some moral outlook, who wished to find in art a reference to nature, who looked for a reason or a symbol in every stone, sided with the Gothicists. Those who



The Lady Chapel, Liverpool Cathedral

delighted in abstract form, in balance, in unity, who refused to admit of a relationship between beauty and morality, sided with the Classicists. And so the two revivals proceeded, side by side, their adherents satisfied that the virtues which they looked for in architecture were incompatible. At last, after a century, it would seem that the essence of both of these sets of striving ideals has been distilled into a single building which will rank, when finished, with the finest in the world, and forever close the breach between the opposing factions. It will have achieved,

indeed, what has hitherto been deemed impossible.

The competition for Liverpool Cathedral was won by Sir (then Mr.) Giles Gilbert Scott in the early years of this century, at the age of 22. The foundation stone was laid by the late King Edward VII in July, 1904. In another July, exactly 20 years later, his son, King George V, was present at the service of consecration of the first part of the building. During that time the original design has undergone certain radical changes, the most important being the substitution of a single central tower for

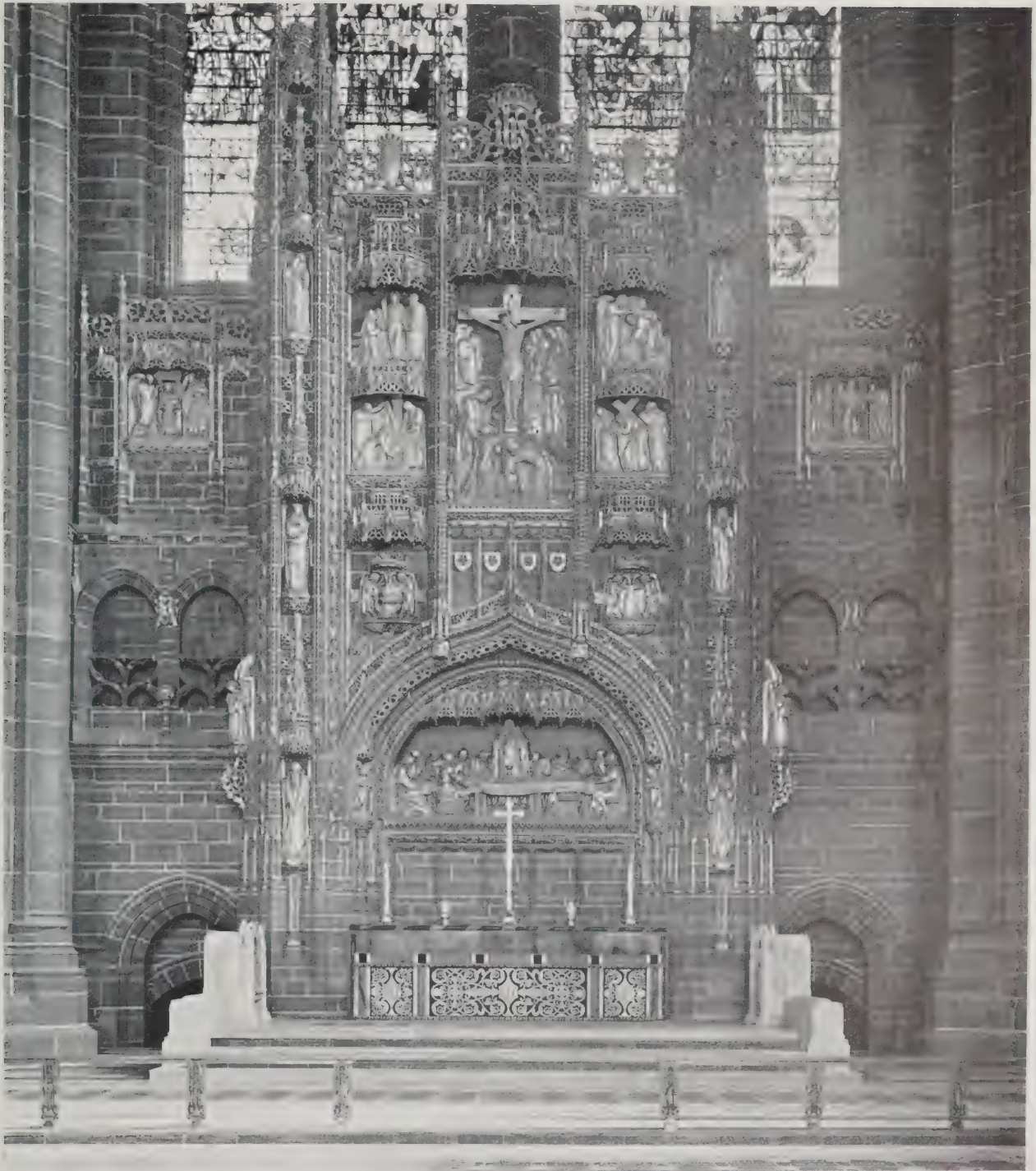


Southeast Transept, Liverpool Cathedral

twin towers. Undoubtedly the design has gained by this change, even if certain minor internal vistas have been sacrificed in order to give adequate support to the tower. The church is best seen, perched on its rocky eminence, from the river Mersey, and from here a finer effect of unity will be yielded by the one central tower than by the shifting and confused perspective of two. That the Classic unity already referred to is an integral part of the composition is at once apparent from the plan, which is, with the exception of the lady chapel and the chapter house,

symmetrical about both its major and its minor axes.

At the crossing of these axes is a large central space, above which rises the tower. East and west are the two sets of transepts, and between them are the great porches. Beyond the transepts are the two extensions forming the nave and the choir, the former terminating with a narthex, the latter, with an ambulatory, and beyond, jutting out below the main sill level, a range of sacristies. The suggestion of a Classic balance and rhythm, which is so clearly indicated by the plan, is enhanced by two things,—the



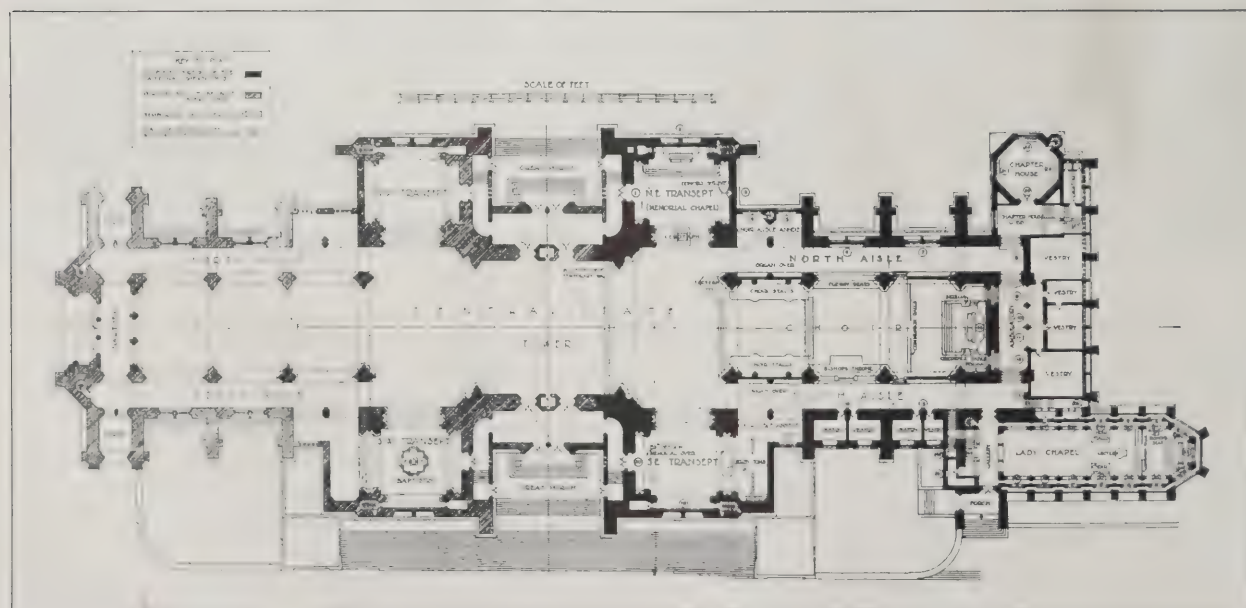
The Reredos, Liverpool Cathedral

bigness of the parts and the large, unbroken wall surfaces. The nave and the choir are each divided into only three immense bays. A mediæval church of such dimensions would have had twice or thrice the number. But if the plan itself departs from Gothic precedents, its structural development displays even more noteworthy departures from tradition, and deals with a problem, the handling of which by Wren at St. Paul's, has been the subject of much criticism. In any vaulted structure, in which the thrusts are alive, the buttresses become the dominating feature.

The very existence of the building depends upon their presence at certain fixed points. In most mediæval churches they are seen jutting out at regular intervals from the main walls, sometimes *flying* across from the main to the aisle walls. When Wren designed St. Paul's he was loath to have his wall surfaces broken up, and so he devised the expedient of a screen wall above the aisle. Sir Giles Gilbert Scott, faced with much the same difficulty, has handled it differently and, some may think, more successfully than his rival predecessor. The aisles are



LIVERPOOL CATHEDRAL: ST. JAMES' CEMETERY IN FOREGROUND



PLAN, LIVERPOOL CATHEDRAL COMPLETE

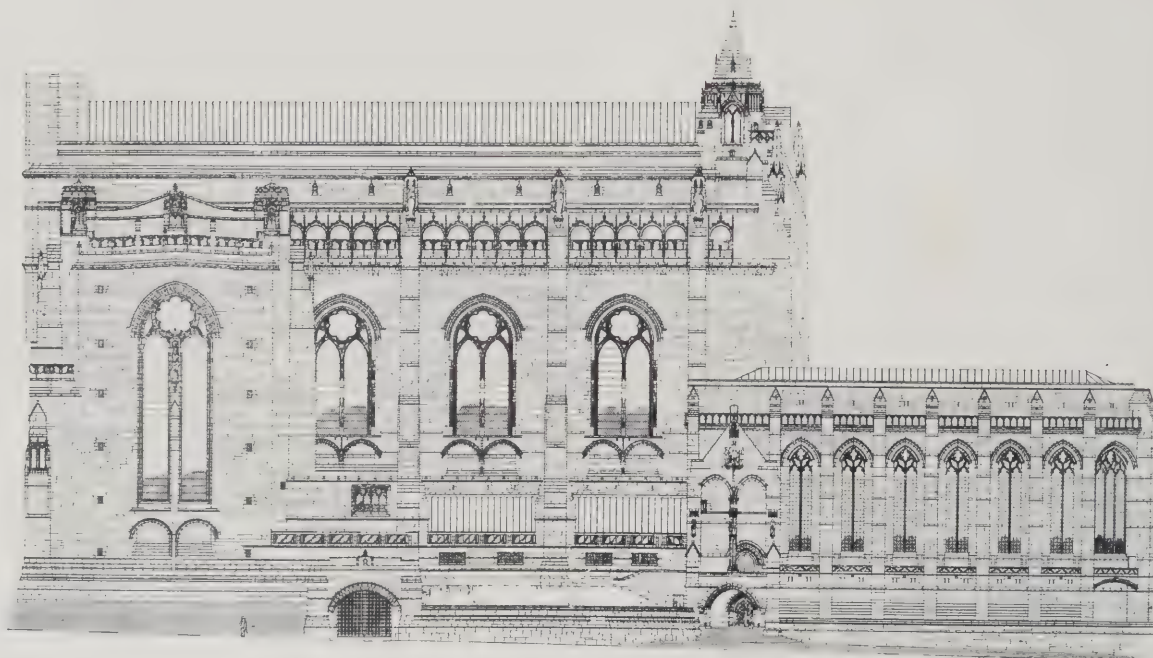
kept the same height as the main arcade arches, and above runs a triforium the same width as the aisles. The walls between the buttresses are therefore no mere screening device, but are roofed and enclose the aisles and triforium. Above this the buttresses are connected by an external gallery, and here, at this level, is a wealth of detail, on such a scale that it can be appreciated from the ground, but contrasting with wonderful effect with the massive, unbroken surfaces below. With such lofty aisles the clerestory has been altogether omitted, and each bay is lighted by a single two-light window in the aisle wall.

In a vast undertaking of this kind, where of course all the money cannot be raised in advance, there are two alternative methods of procedure; the one is to complete the fabric, carrying out the decoration and furnishing as funds become available; the other is to undertake the erection of the building, section by section, each section, however, being complete in every detail. We have recently had instances of the use of both methods. The Roman Catholic Cathedral at Westminster, opened in 1903, presents an instance of use of the first method, Liverpool an instance of the second. There is now completed a little more than one-third of the whole building, including the lady chapel, the chapter house, the choir, the two eastern transepts, and the space between

them, but this portion contains many costly features such as the organ, the reredos, and the great east window. Despite the vicissitudes of a prolonged war, the erection of this great enterprise of faith has marched steadily forward since the laying of the first foundation stone. It is computed that the entire cost will be approximately £2,000,000. The next part to be undertaken is the great central space and the two western transepts. This is expected, without carrying the tower to its full height, to cost some £300,000 and to occupy the next six or seven years. The completion of the nave and the tower will probably take a like period. It must be remembered that in point of size Liverpool Cathedral will be the third largest church in the world, being exceeded only by St. Peter's and the Cathedral of Seville. Its total length is 619 feet, its width 197 feet, and its height to the top of the tower 342 feet. But it was never the ambition of those who originally promoted the scheme to aim at mere size. One of the requirements was for a large, open space in which a congregation of 3,000 persons could, on special occasions, see and hear a preacher and join in acts of public worship. This requirement set the scale for the building, which exceeded in size the anticipations of the committee. Nevertheless, they decided that even such a vast and costly building was



Choir Stalls, Liverpool Cathedral



Elevation, Eastern Portion, Liverpool Cathedral

within the resources of the diocese, if its erection cost were spread over a sufficient number of years.

A red sandstone has been used throughout, giving a rich, red glow to the internal and external surfaces. If the success of a building is to be in any way measured by the quality of the emotions to which it gives rise, Liverpool Cathedral is an undoubted masterpiece. The entrance at present is through the temporary screen wall at the west end. No sooner has one entered than one is overawed by the superb majesty of the place. The lines of the great piers soar up unbroken to the vaults, losing their sharp outlines in the dimness that the vast place encloses. The climax of the vista is the great reredos, constructed of the same red sandstone and thus becoming an integral part of the structure and not a mere adjunct. Like brightly colored threads in the texture of a tapestry, the intricacies of the rich ornamentation concentrated here and there run through the whole design, all contributing to a deep emotional expression of exultation and serenity. Liverpool Cathedral would tend to confirm another abstract theory, that architecture is, at its best, the outcome of the union of emotion and intellect. Fused into it are the finest emotional qualities, but they are wisely tempered by a supreme intellectual control. All this and much more one becomes aware of as one first enters and allows the mind and the senses to react to the full and overwhelming beauty of the place, dispelling once and for all any doubts that may exist as to the capabilities of this age to produce a building equal to the greatest structures of the ages past.

A modern building, just on account of our in-

creased knowledge, is necessarily more complicated than similar buildings which preceded it. A great deal of care has been devoted to such subsidiary matters as heating, ventilation, fire prevention, and lighting. For the heating a combined system of warm air and hot water with an accelerated circulation has been adopted. With this system the heat lost through windows and at similar places is made up for by local hot water pipes and radiators; the remainder of the heat is provided by warm air stoves. On account of the height of the Cathedral and the elevation of the site, special electrically-driven pumps are installed to supply the fire hydrants. Among its electrical equipment is included electric vacuum cleaning apparatus; equipment is of the most advanced type.

And so this stupendous undertaking proceeds steadily forward to its ultimate completion, 15, 20 or 25 years hence. The characteristics of this age, we are told, are cynicism, flippancy, and vulgarity, but of these there is never a sign in Liverpool Cathedral. Is this an indication that the building is false to its period? We think not, for are not these qualities, painfully in evidence as they undoubtedly are just now, superficial? Underneath the soul of man is striving toward better and nobler things. Liverpool has now become the gateway to England. As the great ships draw close, those upon them will see this majestic, glowing pile pinnaced above the city, a visible testimony of the fundamental nobility of mankind; an expression, as magnificent as any that he has ever erected, of his faith. A cathedral is, or at any rate should be, an always visible symbol of truths which are themselves unchanging and eternal.

The Women's Athletic Club, Los Angeles

ALLISON & ALLISON, Architects

By MARGARET CRAIG

THE Women's Athletic Club of Los Angeles is one of the most recent buildings designed by Allison & Allison, and is a splendid example of a happy combination of beauty and utility. To understand sympathetically the needs of a group of people, whether it be a club, a church or a school, and to express in a suitable building the unified architectural consciousness of the organization with dignity and with spiritual feeling, combining the various departments of the organization into a functioning unit of satisfying comfort, is not an easy task, but here it has been done with comprehensive skill. Every need has been given thoughtful study.

The structure has been built in the business section of Los Angeles, and is owned and used by a large number of women who find it a convenient center for civic and social activities. In the midst of a rapidly growing city, it has indeed become a quiet haven where several hundred women are permanently housed, where congenial women gather for acquaintance, for entertaining of friends in small parties, and for the reception of guests from other

cities. The activities of the club determined the general first-floor plan of the building, which consists, in brief, of a rather formal entrance, including a vestibule; a large inner hall, used as a place to receive friends; the telephone exchange and information desks on one side, and the elevator shaft on the other.

A foyer on the second floor opens into the spacious lounge, into the dining room, and into the offices and dressing rooms. Above this social section are four floors of sleeping apartments, separated completely from the activities of the part of the house open to the more active interests of the club. The roof is reserved for tennis courts, while the lower southwest corner of the building is occupied by athletic rooms, which include a Pompeian swimming pool and a gymnasium. The French doors of the lounge open upon a walled garden which is overlooked by every window and door on this side of the building. The structure itself is of solid concrete, monolithic in type, and is covered with a light coating of warm gray stucco, applied in such a way as to permit the form marks to remain in evidence. The



Women's Athletic Club, Los Angeles

best period of palatial architecture of the early Italian Renaissance was drawn up for the greater number of the details used in the ornament of the building.

Since it is a club for women, and has a specific mission to fulfill, a definite feminine touch has been bestowed upon the details of construction, as in the fenestration as well as in the pediments over the lower row of second-story windows, in the sgraffito work on one section of the facade walls, and in the delicacy of the majority of the pillars and arches. The use of sgraffito on a modern building is not common, but when applied with skill, as it is on this women's club house, it becomes an outstanding feature and an unusual form of enrichment. Sgraffito is an ancient form of art that was practiced particularly in the fourteenth and fifteenth centuries. Russell Sturgis gives as a definition: "The scratching or scoring of the surface, as of fresh plaster, with a point to produce decorative effects. Sometimes, in plaster work or pottery, the scoring is done so as to reveal a surface of different colors beneath. The process is sometimes carried far, even to the decoration of large wall surfaces." In this instance, the color that has been revealed beneath the darker material is of a reddish tinge, a color that corresponds excellently with the tufa stone used in the balustrades, the pillars, and the lower stone walls of the building.

It would be interesting to analyze the fine piece of consistent design appearing in the exterior of this building, which is a departure from the usual monotonous, rectangular elevations that are usually employed in business structures. Here one perceives in the obvious division of the exterior a genuine indication of the functional departments of the interior. The stone entrance, arcaded with three arches, is

flanked on either side by groups of shops, a source of revenue to the club. Thus the entire first floor is more formal and allows the actual club quarters to begin on the second floor. This suggested division is accented by a picturesque balustrade extending over the west group of stores and at the base of the garden wall, forming a logical outlet from the garden. The second and third stories are used for social activities, and this function is perhaps indicated by the graceful balcony extending over the three entrance arches which also form a dividing line between the two parts of the building; and by the sgraffito ornamentation which is spread over the broad rectangular spaces between the window openings. The wing at the right is closely tied to the main building by the parallel cornices, and is used for the business offices. It forms an attractive design by itself with its window shutters, the grille over one window and the line of dark openings in the wall of the third story screening an awning-sheltered balcony.

At the left of the sgraffito-decorated section is the second story garden, the wall enclosing it suggesting by its simplicity and height the seclusion of the gardens belonging to Italian villas. The balustrade, which also serves as a fire escape, leads to the outer exit of the garden. In this manner the architects have beautified the necessary structural features which so often are discordant notes in a general scheme of building, and which frequently destroy its harmony.

A simple broad cornice separates the social unit from the four stories of sleeping apartments above. The walls here are of plain texture, broken only with the unvaried, rhythmic lines of dark shuttered windows. This arrangement affords an appropriate expression for the exterior of that portion of the club



Dining Room



Garden Court

house. Just beneath the gabled red tiled roof, topping the entire building, are the three groups of arched openings that beautifully balance the first-floor loggia. The upper loggia is used as an outlook for a view over the widely extended, outstretched city.

The central arch of the ground floor loggia forms a frame for the vestibule, suggesting the charm of the club house, since it has a painted ceiling and potted shrubs that contribute softening lines. The handsome carved doors swing open into the main hall that is constructed with three different ceiling levels graduated in height so as to give a feeling of distance and to suggest a division of room space without the use of walls which would divide the area.

As has already been noted, the first division of this floor is into the areas for elevators, telephone booths and information desk. The next division is used as a reception room, where guests are announced and inquiries are made. A tall Gothic bench together with a few formal chairs facing the main doorway reflect the dignity of the room. The ceiling here is formed by exposed cement beams painted with rich colors in conventional design. The third division of this hallway has a lofty ceiling and includes the easily rising stairway. This arrangement naturally forms a little open sitting room or nook at the right of the lower group of stairs that is very cozy with a deep couch, easy chairs, reading lamps and desks. All of these rooms are carpeted with heavy golden rugs that blend well with the carved furniture and with the wrought iron lanterns.

The second story is devoted to the social activities of the club. The ample stairs rise easily to the lobby which opens into the lounge on the left, into a writing room on the right, into the large dining

room on the west, and into the business offices and directors' room at the head of the stairs. This second floor is manifestly the heart of the building and centralizes the important activities of the organization.

The lounge is extremely spacious, the tall ceiling adding height. The furnishings are grouped about the fireplace, near the piano close to the windows, and in several corners. The architects have so planned these social rooms that are used for general visiting, for receptions and for recitals that there are smaller connecting rooms, such as the cozy library with fireplace, including little nooks, a silence room that always proves a boon, and a card room on the balcony, with a window overlooking the lounge. These minor details of design bespeak an understanding of human nature, as a builder must be sympathetic with the whims of groups of people who like to be a part of a crowd of people and yet be semi-isolated. The stairway that leads to the balcony card room is quite picturesque, and is in harmony with the furnishings of the room, the chairs and tables Chinese red, the hangings of black, red and yellow. A small dining room is also included.

The main dining room extends across the southern portion of this section of the building. Its ceiling is lofty and beautifully painted; the windows are tall and rather narrow and hung with golden brown curtains, tied back with heavy cords. At one end of the room is a large buffet, and tall candelabra of wrought iron are symmetrically placed on either side of this heavy piece of furniture. At the other end of the room is the plainly constructed stairway, an actual necessity that has been made a thing of beauty.

Perhaps the most unusual part of the club is the second-story garden. The broad French doors of the



Stairway in Garden Court



Detail of Entrance

lounge and of the smaller dining room open directly upon this refreshing space of outdoor beauty, in reality a very integral part of the general structure. It is quite amazing how a substantial garden of broad proportions could be made of practical value so far above the street level, and could be so cleverly and skillfully furnished with trees, shrubbery and garden seats. The foundation of the garden is the same as the structure for any tall, modern building, a comforting assurance for those who might doubt its stability. Its architectural setting is indeed most charming. It is interesting to note that the ornamental balustrades, picturesque arcades, terraces and stairways accented with pillars and railings of tufa stone, are all functioning, and are not applied as mere features of embellishment. They are all structural.

Miss Florence Yoch, the landscape architect, was called upon to plant the garden, and she used as a type the gardens of northern Italy, since these are known to be more simple and naïve than those around Rome. Her endeavor was to maintain continuously an atmosphere of age and delicate reserve, and she found Italian material more suitable. She used the cypress for height and the gnarled olive trees to furnish a thin screen of lacy pattern so as not to cut off too much light from the neighboring rooms. Another reason for the choice of these trees is that both varieties can easily be transplanted, and are capable of withstanding the winds of the second-story exposure. The main part of the garden is carpeted with grass. The use of color in the garden is confined to the flowering plants, which are changed according to season. Rose vines, wistaria and ivy are trained against the walls. Oleander, fragrant olive, boxwood and myrtle are used at the borders of the lawn.

Each of the wall treatments of this beautiful Tuscan garden forms an individual pattern of architectural design of lively color and decorative line. The wall of the building is broken by an arcade balustrade that parallels the ceiling lines of the lounge of the interior. The tufa stone pillars that uphold the arches are of a pastel pink that blends exquisitely with a wall background of vivid blues and luminous yellows. The stairs that lead to the arcaded balcony above the terrace on the south side of the lawn have a landing a few steps above that extending into a corner garden retreat. This is made very engaging with stone benches and seats, all partly hidden by a leafy bower of shrubbery and olive trees. Miss Yoch says that one day she playfully pictured some olive trees walking right up the steps to the second-story arcade. As a consequence, she planted several trees along the stairway, and they were found to thrive as well as they do in Italy, often in the most unpropitious places. The arcades on either side broaden out into a terrace on the north exposure which forms another retreat and adds one more to the comfortable details of the club house. A brightly colored awning is swung over part of this upper terrace and gives a touch of gaiety to the setting.

Thus every part of the club house has been logically united to the whole plan, and from every corner there is some view of a variety of fine architectural details, arched openings, colonnades and alluring corners in which to meditate or converse. The building is an expression of the finest and most romantic period of domestic architecture, fittingly adapted to form the home of an active group of women who are furthering the improvement of the social and civic usefulness of their community.



One Corner of the Garden Court

House of D. C. Prince, Esq., Schenectady, N. Y.

THOMAS HARLAN ELLETT, Architect

IN the design of the house in Schenectady, which we have under present consideration, the architect, Thomas Harlan Ellett, has done two things. First of all, at the very outset he has shown very plainly a regard for local precedent in casting the contour of his masses and determining the broader characteristics of style; then, in the second place, he has stamped the finished result with the clear impress of a distinctly individual interpretation.

Before entering into an examination of any of the particulars of style, however, it will be to the point to note in a general way the more conspicuous features of the fabric, indicating the materials and the manner of their use. The walls of the north or entrance front, and those of the south or garden front, are of stucco worked down to a fairly smooth surface, while the walls of the gable ends, at the east and west, are of common brick whitewashed. The eastern extension for the service quarters and the garage is stuccoed and whitewashed below, with quoins formed of unwhitewashed cement blocks, and a shingled gable end above. Cedar shingles cover the roofs and are also used for the walls of the upper story of the south front. Such are the materials used.

Inasmuch as the house stands in the heart of the region with which the early Dutch settlers of New York were closely identified, a region where ingrained Dutch traditions still manifest their wonted vitality, it was quite natural to fix upon a Dutch form of architectural expression as long as no other specific preference was to be taken into account. Indeed, a Dutch mode would be the first thing suggested by the imagination in shaping the initial stage of design. The Dutch Colonial type is not only indigenous to the spot in its development but it has also shown itself through many generations to be eminently fitted to the local conditions of climate, conditions which demand sturdy structure, compactness and warmth to withstand the rigors of winter weather and, at the same time, a general scheme of arrangement

that will ensure airiness in the heat of summer. The old Dutch colonists, unconsciously it may be but none the less certainly, developed such a type of house under stress of circumstances and in the light of experience. To have overlooked or disregarded the claims of this type would have been a foolish denial to the promptings of the imaginative faculty as well as a negation of common sense in house designing.

Outwardly the house conforms in appreciable measure to the gradually evolved precedents that marked the later phases of the American Dutch house,—enough to indicate the source of its derivation so far as its general lines and contour of mass are concerned,—but the indications of ultimate ancestry do not extend to the treatment of the windows, the use of an overhang, the introduction of a balcony, the employment of quoins, or sundry other features that enter conspicuously into the composition to contribute very materially to its strongly individual aspect and to evidence the originality of its conception. With reference to these items of design and construction, the architect has exercised the liberty of interpretation and interpolation in the light of circumstances and personal choice. To such a course there can be no possible objection advanced, except on the part of archæological purists to whom architecture is not a living organism but a dead letter, and who

would suppress initiative and invention, stifle all healthy, legitimate growth, and kill the very traditions they profess to hold in such reverence. Good archæology is one thing; mimetic triviality is entirely another thing.

In the matter of materials, there has been perhaps a closer adherence to Dutch Colonial usage, although here again tradition has served the purpose of suggesting background and has not figured as a rigid, prescriptive canon to shackle freedom of action. The Dutch builders were invariably opportunists in the choice of the materials they employed in the course of construction. Stone, weatherboarding, stucco, brick,—whatever came readily to hand and filled the



Main Facade, House of D. C. Prince, Esq.



Entrance Detail

needs they had to meet,—they used without scrupling about the dictates of established custom. Consequently, they produced the many fascinating and varied combinations that we now sincerely admire. In this Schenectady house the use of varied materials in combination is not only perfectly logical but agreeable and, in point of texture and color, the results are notably happy. As to texture, the white-washed brick walls of the gable ends call for a word of commendation, while the juxtaposition of uncolored cement quoins and white stuccoed walls in the garage and service wing is a bit of pleasant ingenuity. Incidentally, such engaging conceits as the wren house atop the gable of the garage, the carved oak lintel of the house door, and the boldly contoured oak brackets beneath the overhang, all add their share of interest and accent to the ensemble in which diversified materials and textures are such appreciable factors.

Inwardly, no following of Dutch Colonial precedent in plan can be discovered, for the very good and sufficient reason that there was no precedent of plan, save the precedent of absolute independence and license to do whatever each builder found would best suit his own convenience. In this respect, perhaps, the architect may be said to have followed Dutch Colonial precedent completely, for he has adopted a plan economical of space, comfortable, adequate in pleasant exposures and light, and instinct with informal domesticity. Such were the qualities of plan in the old Dutch Colonial houses with their endless diversity and what often seems to us their fortuitous



View of House and Garage of D. C. Prince, Esq.

arrangement, and such is the quality of plan of this modern Schenectady house which is being considered.

It is plain by now in what manner the architect has done the two things it was said at the beginning of these paragraphs that he had done. It remains to say, however, that in his doing of them he has added one more item to the increasing total of the sane and wholesome development of domestic architecture in America. This contribution he has made not so much by the design of the particular house here being considered—whatever its individual merits may be—as by the spirit in which he has created the design and the principles manifested in its working out. He has quite obviously not disregarded tradition and precedent. Had he done so, the contour of the house would not have been reminiscent of the dwellings built by the Dutch colonists and their descendants; there would have been no white pine staircase with balustrade of engaging design, nor would there have been the admirable pine paneling in the dining room, fashioned in an early New England manner. At the same time, he has not refrained from exercising his imagination very actively in departing from local precedent by introducing features that never had any association with Dutch Colonial architecture,—such, for example, as casement windows, the balcony on the garden front, the overhang with its shaped oaken brackets, or the wren house surmounting the gable of the garage. He has also exercised his imagination in combining in one composition various features of widely divergent origins. The design of the



Dining Room



Living Room



Detail, South Front



Entrance Hall and Stairs

balustrade for the staircase is an adaptation from an Italian prototype; the raised and shaped panels that appear on the newel post are distinctly of seventeenth century Bolognese character; the oak brackets beneath the overhang belong historically to seventeenth century England or New England; the dining room paneling finds its prototype in early Connecticut work; and some of the casements are French in their derivation. Other instances might be cited of freedom exercised in the important matter of design.

In this departure from strict precedent and introduction of incidents drawn from widely different sources, imagination has been brought into play, but imagination has always and everywhere been tempered with common sense and discretion. Knowledge of precedent, respect for tradition and discernment in judging when and where it is expedient to depart from them, on the one hand, and imagination guided and tempered by common sense and an appreciation of the fitness of things, on the other—these are the fundamental elements of the truest and most fruitful originality; these are the qualities that have contributed most to the vitality of the best modern domestic architecture in America and that have given it preëminence above architecture of other countries.

There are several factors always militating against the growth and continuance of such vitality. One of them is imperfect knowledge of precedent and the blind adherence to only a part of tradition, exalting it to the position of a sort of fetish, until design becomes a perfunctory, ossified thing, stupid to look at and so hopelessly inelastic that it is utterly incapable of any freshening variation or of adaptation to the

demands legitimately made upon it. Of this sort of thing we have an apt illustration, often too painfully evident, in the Georgian or so-called "Colonial" manner as it finds expression in the work of certain architects who are culpably content with a superficial knowledge and an unworthy, inadequate conception of its flexibility and resources. By way of Nemesis for this sort of thing, there are plenty of people to be found who are willing to entrust a moderate-sized Georgian house to a building contractor, without calling in an architect, because they feel that plan, design and details are all merely standardized routine matters to which architectural skill is not necessary.

The other factor prejudicial to vitality is the deprecatory attitude so frequently assumed toward the faculty of imagination. Exercise of imagination on the part of the architect is only too likely to be looked upon with grudging tolerance and shamefaced concession, as though it were a thing to be guarded against and mistrusted. It is all right, apparently, for an engineer to draw freely upon his imagination in conceiving bold schemes for viaducts, canals or bridges; but an architect's imagination, by some strange process of reasoning, it seems, ought to be bottled up. As a matter of fact, the part imagination ought to play in the work of an architect cannot be too strongly emphasized, nor its rightful place too insistently asserted,—so long as imagination goes hand in hand with common sense in house building.

In view of this comment, it is gratifying to note the evidence of a wholesome, constructive point of view displayed in the design of this house at Schenectady in entire accord with its surroundings.

The City House of Benjamin Wood, Esq.

WILLIAM LAWRENCE BOTTOMLEY, Architect

ARCHITECTURAL opportunity is not always to be measured by magnitude, and one architect may design a simple doorway that is a thing of enduring beauty while another makes a botch of a state capitol. Of the reality of this thought, one is vividly and circumstantially impressed by the architectural ingenuity, imagination and taste revealed in William Lawrence Bottomley's remodeling of a narrow city house on 52nd Street, not far from Park Avenue, in New York for Mr. Benjamin Wood.

Perhaps architect and owner shared some whimsical regard for the surprises that delight the mind in childhood tales of magic; at any rate, the exterior of the house was left in its original form, expressing or suggesting nothing of what might exist behind its reticent and modest front. The visitor, mounting a few steps, finds himself in a small vestibule, with an arched window of leaded roundels where ordinarily doors would be, and the door itself, also with leaded roundels, at his right. Once within the door, the house begins to declare its triumph of architectural design over literal dimensions. An old Italian grille of wrought iron, with gates, admits to a small foyer which occupies the whole 20-foot width of the house. Through the central arch of a graceful double arcade of three, there is a vista down into the lofty living room beneath. Through the right arch the stairs lead upward, and through that at the left, stairs lead, at right angles with the others, down to the living room floor.

Words could hardly be arranged to convey an exact idea of the sheer ingenuity of design exerted at this point in the house plan, nor would they accurately suggest the extraordinary scale given the living room. The illustrations show the charm and effectiveness of the vistas seen both ways,—looking down into the living room, through the double arcade, and looking back and up from the living room through the same arcade.

The living room has all the appearance of a great hall in an

Italian villa; its color has been kept in an admirably subdued key; there are no errors in scale, and there are no illusions to make its dimensions appear greater than they really are. There is well controlled color in the ceiling, which springs on vaults from corbeled pilaster caps, and the mantel is thoroughly a part of the picture. A paneled door beneath the stairs that lead down into the living room gives access to service quarters as admirably compact and efficient as are those on a yacht,—service quarters, indeed, reduced to a minimum in area, yet lacking nothing in completeness, carefully and economically planned.

Looking toward the garden, a tall, arched opening with French doors is flanked by single windows in a simple Palladian composition, and high above them, incorporated in the ceiling vault, are three small windows of leaded amber roundels given further decorative effect by wrought metal grilles over the openings.

A glimpse through the central opening discloses a miniature formal garden, with flagged walks, brick-bordered flower beds and a lead fountain figure presiding over a basin of gold fish. But it is the back wall of this garden that seems to turn the pages of later-day architectural design back to the day of those resourceful architects of Renaissance Italy—of the designers who knew their architecture so well that they could play with it now and then. Looking at this back wall at close range there is the appearance of a long, barrel-vaulted corridor, running back perhaps 100 feet. It is there, seemingly in tangible, three-dimensional form, but its actual depth is not more than 6 feet. Mr. Bottomley has created an illusory perspective in three dimensions, skillfully counting the capitals of the columns, skillfully diminishing them in size, and skillfully inclining the lines of base and entablature at precisely the pitch to baffle optical detection of his artifice. Recourse to the camera in this instance seems only to heighten the illusion; and facing the actual thing, one undergoes the



Street Facade



ENTRANCE HALL AND GATES



Photos. S. H. Gottscho

CORNER OF BEDROOM
HOUSE OF BENJAMIN WOOD, ESQ.
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT



THE SALON



BREAKFAST ROOM
HOUSE OF BENJAMIN WOOD, ESQ.
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT

paradoxical experience of plainly seeing something and at the same time confirming with the same sight the fact that the thing one is looking at does not exist. Endeavoring always to draw conclusions from architecture, this happy and graceful artifice of Mr. Bottomley's leaves one with the thought that perhaps architecture since the heyday of the Renaissance has become too serious and conventional, and that a fear of being accused of doing "stunts" has stayed the hand of many on architect from doing things through the medium of sheer design that would create and stimulate a new interest and joy in architecture among the countless multitudes of people who think that architecture (when they think of it at all) is the dullest and least appealing of all the arts. Why not more bits of design like this brilliant illusion of a long vista? Theatrical? What of it, and why not? Was not a very large part of the work of the architectural genius of Renaissance Italy essentially theatrical? Losing the spirit that dared design and execute such a bit as this interesting vista, architecture has been left with nothing but a collection of forms once used by men who knew how to use them with the brilliant imagination necessary.

Returning to the house, two rooms on the second floor deserve special attention. One of these is the owner's bedroom, which is exactly what such a room

should be,—a quiet, restful room, furnished with a rare perfection of taste. Across the stair hall is a sitting room, done in dull green, its panels framing a set of admirably painted ship pictures by F. Leo Hunter, beneath a zodiac frieze of silver and delicate colors by Barry Faulkner, who also decorated the ceiling and lunettes in the bay window. Here an array of colorful old glassware adds effective incident. Behind concealed doors, closets with sliding traps afford a surprising amount of storage space, and paneled doors open to disclose a charmingly appointed dressing table for the use of the dinner guest.

Not a few considerations impress themselves upon the mind in examining this very unusual house. One of these is a realization of the power of design to overcome dimensional limitations; another is a fresh revelation of the potency of imagination, coupled with measured skill, in creating illusions which almost become realities; still another is the rediscovery, in the device of the garden vista, of a part of Renaissance genius, supposedly lost. And above all, one cannot but feel that here is a house that resulted from perfect accord between architect and owner,—from a likeness in matters of taste, and from an unreserved sharing of the vision without which no such charming, unusual and distinguished architectural accomplishment would have been in any way possible.



Salon, from Mezzanine Entrance Hall

Old Plantation Architecture in Louisiana

PART II. THE RESULT OF FRENCH AND ENGLISH INFLUENCE

Text and Sketches by WILLIAM P. SPRATLING, Professor of Architecture, Tulane University

FEW people know of the "Florida Parishes" of Louisiana and their unique history. Technically, the Florida Parishes were those included in the strip of territory along the Gulf which belonged to Spain at the time Florida was under Spanish dominion and which also included parts of Alabama and Mississippi. They stretched from what is now the Mississippi state line, at its southwestern-most corner, westward to the Mississippi River. They were formed, then, of the Louisiana parishes which extend northward from Lake Pontchartrain and westward to the river, and included St. Tammany, Tangipahoa, Livingston, East and West Feliciana, and several others. At the time of the Louisiana Purchase, which took place only three years after the territory had been ceded back to France by Spain, there was serious misunderstanding as to the status of these parishes. There is said to have been a determined movement among the inhabitants for complete independence, and that they even went so far as to commission an ambassador to Washington. These are simple facts, and it requires no great stretch of the imagination to evoke the stirring scenes that must have taken place in those exciting days. How significant of the diversity of material that has gone into the making of the traditions of this country—traditions from so many different sources!

The Florida Parishes, and the Felicianas in particular, formed the sphere, architecturally, of some amount of Georgian influence. This purely English tradition, as has been noted in the first of these articles, was the result of direct immigration by settlers from the Carolinas. "Waverly" represented probably the earliest and most complete use of the Georgian in Louisiana. Built in 1807 by an Englishman, and in somewhat modest proportions, it still reflects a certain provincialism and closeness to the soil notwithstanding an absolute detachedness from previous Louisiana tradition and in spite of an abundance of sophistication and refinement as exhibited in the classic and Adam-like elaboration of mouldings. "Waverly" is located about five miles above St. Francisville, that charming little town which is perched on high bluffs on the east bank of the Mississippi. A strange contrast is observed between the English "Waverly" on one side of the river and "Parlange Plantation" on the other, where

we find the French and Spanish spirit in colonial work given the simplest and most characteristic expression.

The most peculiar thing to be noted in regard to most of these old houses is that their effectiveness is achieved not by means of an accumulation of architectural fact or detail but in the subtlest and at the same time the most natural way. This simple formula we find clearly and honestly expressed in "Parlange," built in 1815. It is to be rather regretted that this "native" quality is not consistently present throughout this region, and that it becomes apparently somewhat lost sight of during the period just preceding the Civil War. This is the chief criticism to be lodged against "Burnside," a comparatively late example. "Burnside," located about halfway between New Orleans and Baton Rouge, possesses beauty and even some degree of magnificence. The grounds and the house itself are remarkably well kept, and the approach to the building is most effective. In type "Burnside" should probably be classified as distinctively Louisiana only as regards generousness of proportions in planning, the use of French windows, and in minor details, not omitting the two delightful *garconnières* placed symmetrically on either side of the house. Its crowning characteristic details,—the cornice, the dormers and the lantern and of course the "whale walk,"—are all strongly reminiscent of New England. Taken as an example of the old Louisiana plantation, "Burnside" must be considered as rather unique, and this in spite of the wealth of tradition of which it is possessed, accumulated by generations.

Another house which is also unique in point of design is on the estate called "Asphodel." Here, however, we have a house which is more perfectly indigenous to Louisiana. It is a building of rare charm, and was one of the most gratifying discoveries in our ramblings in search of material. Located vaguely some 38 or 40 miles above Baton Rouge and near St. Francisville, it is approached through a particularly wild stretch of virgin forest, and the road as it now exists winds up at the rear. The effect obtained on that side is of a tremendously broad reach of veranda with typical slender swelling colonnettes supporting the wide expanse of leisurely sloping roof. The front presents a sharp contrast. Here the main body of the house emerges daintily in the center, and a second



"Oak Grove," Near St. Francisville



"Rosedown," Near St. Francisville

story appears as evidenced in the two graceful pedimented dormers and the gable windows. The wings, with their little two-columned porticoes and classic pediments, give one the same feeling of quaintness as do some of the old Virginia manor houses. There is a remarkable purity as well as charm about it.

In the vicinity of St. Francisville are to be found several other examples of importance. Notable among them are "Rosedown" and "Oak Grove." The latter is a charmingly unpretentious house in which

both French and English influence may be traced. Its most remarkable feature,—and a very clever one,—is the treatment of the porch with its secluded and railed porch proper and beneath it a bricked terrace, the two marked each with its own row of colonnettes. These colonnettes, the inner row slender and the outer more sturdy, are very graceful and pleasing in their manner of clustering and in the contrast of their round whiteness with the tone of the old brickwork. The setting of this quietly informal and home-



"Burnside," Near Darrow

like building is felicitous, to say the least. The gently swelling knoll on which the structure is placed is graced on either side with an octagonal brick dovecote. These little buildings are very French in character, with the wooden upper stories and the corner pilasters adding a very distinctive touch to the ensemble. The actual approach to the building is through a long lane which is banked on either side with a luxuriant avenue of well grown mock orange.

"Rosedown" is almost as romantic and beautiful

as its name. Architecturally there are, of course, characteristics which may not always be found pleasing. In the main body of the house one feels a certain severity and lack of grace. This results undoubtedly from the use for the portico of a superimposed Greek Doric order with no delicacy of detail in the cornice or even in the balustrade to relieve its hardness. The columns themselves have been hewn from solid timber and are well in character. In the wings, which come down to single-story heights, we



"ASPHODEL," NEAR ST. FRANCISVILLE



"PARLANGE," POINTE COUPEE PARISH



ONE VIEW OF "WELHAM"



"OAKLEY," ST. FRANCISVILLE



"WAVERLY," ST. FRANCISVILLE

find more intimacy of expression and elegance. The approach is rather splendid, and must have been modeled after the garden architecture of Versailles and the Trianons. There is a certain kinship in the formal avenues with the luxuriant planting and particularly in the placing of many bits of quaintly classic statuary to the work of LeNotre and his contemporaries. It has been done on a very lavish scale, and the result possesses all the suavity and stateliness of the French gardens, together with that rarer quality that comes from proximity to the wilderness. There are many rare plants, with such things as cape jasmine in abundance, and boxwood like a miniature forest that grows 9 feet high. There is a central avenue, and from the front of the house a series of radiating walks and driveways that lead one to all sorts of charming spots. After Weeks Hall's "Shadows of the Teche" at New Iberia, "Rose-down," with its gardens, is probably the finest house of its kind in Louisiana. It is interesting indeed.

"Bellegrove," at White Castle on the west bank of the river, forms a most imposing pile. Originally it must have been somewhat pretentious and "citified," or at least such a thought would naturally come to an architect, we believe, in critically surveying this urbane and extensive mass of structure. Time and neglect, however, have softened the lines and made the fine old house colorful. The type is characteristic

of the period just preceding the Civil War. In plan it is semi-formal and spreads in three directions, with a large right wing facing the garden, and at the rear another wing even larger for service, etc. The detail is what makes the building most worth while. It is all executed in the best spirit of the Greek Revival, the plasterwork cleverly modeled and the wood detail, as in the great cypress capitals of the portico, carved in a very spirited manner. Only one or two features of the building tie it in with other Louisiana work of the period. Among those should be noted the use on the facade of typical New Orleans cast iron balcony rails, and in the frieze of the large entablature the insertion of small attic windows such as are found in the old houses on Royal Street.

Today "Bellegrove" is more or less representative of the last of the old plantation days. The weather has stained the old pink stucco in great lavender splotches, and the green moss has entirely covered the walls in parts. Most of the land of the original plantation has been sold, and a wild, semi-tropical growth of vines and shrubbery is slowly creeping up from the garden side of the house. We were delighted with the picture qualities promised by "Bellegrove," but a little bit disheartened at the obvious decay. It was, however, one of only a few of the more important examples seen which are apparently threatened with serious neglect and approaching ruin.



"Bellegrove," White Castle



Dovecote, "Oak Grove"

THE BUILDING SITUATION

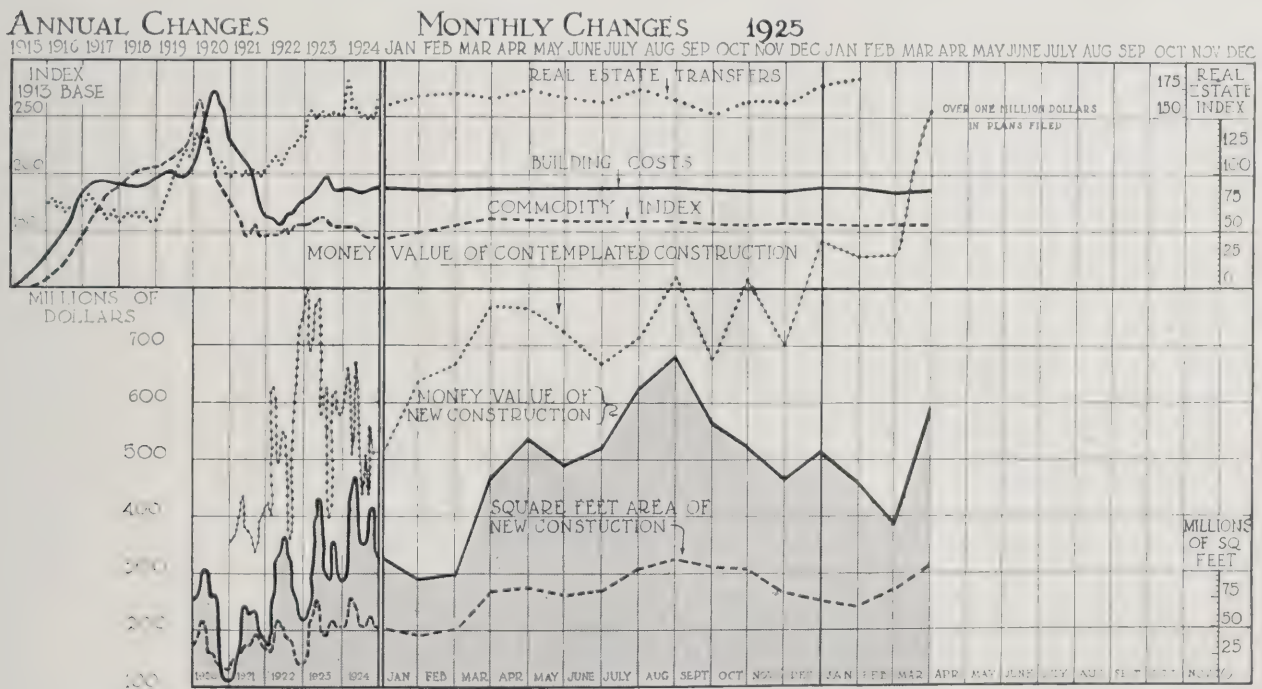
A MONTHLY REVIEW OF COSTS AND CONDITIONS

FIGURES for the month of March, 1926 show a continuation of the record-breaking volume of construction as indicated in this chart. The total value of building and engineering contracts in the country for the month of March was well over \$600,000,000. This amount, according to figures of the F. W. Dodge Corporation, represents an increase of 53 per cent over the month of February and 22 per cent over March of last year.

The total value of contracts let during the first quarter of 1926 is over one and one-half billion dollars, which represents an increase of 30 per cent over the record-breaking figures for the first quarter of last year. It is pointed out that the building boom of 1925 started somewhat later and reached its peak in contract letting during the months of August and September, as will be seen by examining the line showing the money value of new construction on the chart. It is probable, however, that a similar period of large commitment volume will occur during this year as indicated by the amazing volume of contemplated construction shown for January, February and March of 1926 (see chart). Contemplated con-

struction in the form of plans filed during the month of March, 1926 broke all existing records by passing well above the one billion dollar mark—an unprecedented and almost unbelievable volume of prospective building. Approximately half of this proposed construction is in structures of residential types, including dwellings, apartment buildings and hotels. Commercial structures, particularly office buildings, predominate among the other classes of plans filed.

In New York state and northern New Jersey, values of contracts let for new construction during the first quarter of 1926 are over 50 per cent more than the total for the first quarter of 1925. In New England new construction during the first quarter is 4 per cent less than last year. In the Middle Atlantic states new construction is 9 per cent greater for the period. In the Pittsburgh district it is 10 per cent less. In the Central West 10 per cent greater. The Southeastern states show a great increase in activity this year, the increase being 72 per cent over the first quarter of 1925. The Northwest shows a 27 per cent increase for the first quarter, and Texas shows an increase of 47 per cent over the first quarter of 1925.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs*. This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index*. Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction*. Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record*. (4) *Money Value of New Construction*. Total valuation of all contracts actually let. The dollar scale is at the left of the chart in millions. (5) *Square Foot Area of New Construction*. The measured volume of new buildings. The square foot measure is at the right of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined, first by the trend of building costs, and second, by the quality of construction.

Three Types of Stokers for Coal Furnaces

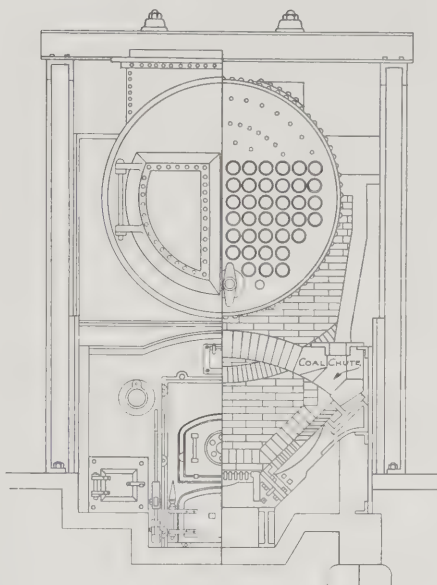


Fig. 41. Side-feed Furnace

Hand-driven Mechanical Stokers. When in operation, (Fig. 42) the grate is a plane surface inclined from the dead plate at the fire doors to about the floor level at the bridge wall. When a new charge of coal is to be applied, the bed is prepared by giving a lever a half throw. This raises the grate bars as shown in the illustration, carrying the coked coal forward. The pull of another lever opens the ash dump to empty the grate of accumulated ashes. By working the grate lever the coal can be moved forward, thickening the bed on the grates to the required depth. Low-fusing ash coal cannot be successfully used with this type of stoker on account of the clinker it would form. Hand-operated stokers are made hopper-fed and hand-fired. With the hopper-fed type the grate blocks are drawn back to allow coal to fall on the front of the grates, where it cokes.

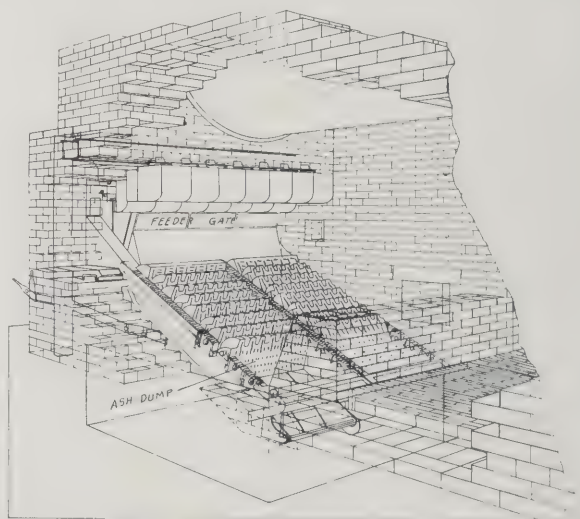


Fig. 42. Hand-driven Mechanical Stoker

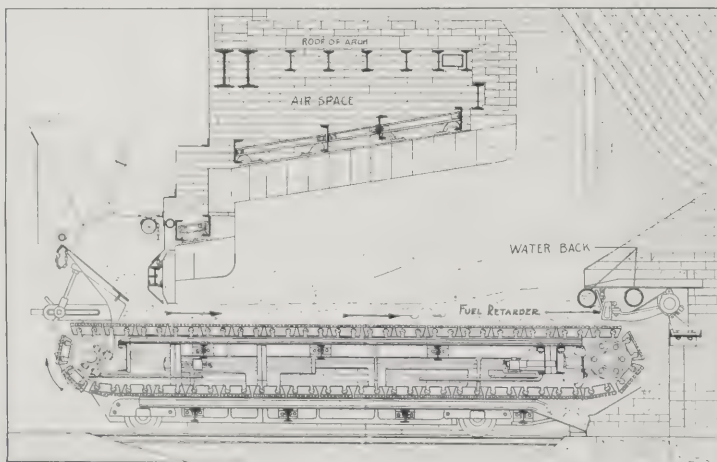


Fig. 43. Chain-grate Stoker

the furnace, so water-cooled barriers which will never become hot enough for clinkers to adhere to had to be substituted. The water back is connected to the boiler, so that all heat absorbed from the fuel by the water within will pass to the boiler.

The steel beams and members which support the arch are enclosed in an air space protected by fire-brick or fire-blocks from the intense heat of the furnace. A fuel box with an arch always has a higher temperature than one without. Exposing the first row of boiler tubes to the radiant heat of the fuel bed gives a lower furnace temperature and greater life to the brickwork. A chain-grate stoker requires for the stoker engine about 30 pounds of steam per hour. This is a more or less fixed amount, independent of the rating of the boiler.

Side-feed Furnace. The furnace shown in Fig. 41 is not a mechanical stoker, but as the principle of combustion on which it is designed is the same as for automatic stokers, it might reasonably be called a semi-automatic stoker. Coal is fed into hoppers at each side of the furnace, and by its own weight feeds down into the furnace as required. The coal is coked on the inclined grates, and the volatile gases distilled in the process of coking are burned in passing over the incandescent mass of coal on the horizontal grates below. The incandescent furnace top or arch deflects the heat downward, thereby maintaining a very high furnace temperature, a condition necessary for successful combustion, and which could not be maintained if the arch were omitted and the furnace exposed to the cooling surface of the boiler. The boiler is operated on natural draft. As it is not necessary to open the furnace door for stoking, there is no heat loss from the large amount of air that flows in when a hand-stoked furnace is being fired. This is often a great advantage.

Chain-grate Stokers. Power-operated stokers are divided into three classes:—chain-grate stokers; under-feed stokers, and over-feed stokers. A chain-grate stoker is shown in Fig. 43. This type of stoker is independent of the furnace in that it is not built into the boiler setting. It is mounted on wheels and can be set in place or withdrawn at will. It consists simply of an endless chain of grates which move in the direction of the arrows, carrying the coal progressively from the green fuel through coking and combustion of carbon to the ashpit. At the rear of the furnace the traveling grate projects under an overhang of the bridge wall. The problem here is dual, to seal this space against the infiltration of air, and to prevent live or unburned coal being carried away with the ashes. This is accomplished by means of the bridge wall overhang, the water back and the water-cooled fuel retarder. Fire-brick at this point would clinker and clog

ENGINEERING DEPARTMENT

Power and Heating Plants

MECHANICAL STOKERS

By J. J. COSGROVE

EDITOR'S NOTE. This series of articles was begun in THE FORUM for April, 1925, when Mr. Cosgrove discussed "The Generating Plant: Boilers," continuing his treatment of the subject in the issues for August and October. In the November FORUM, Mr. Cosgrove wrote of "Commercial Types of Boilers and Furnaces." One article following the present paper on "Mechanical Stokers" will conclude the series.

MECHANICAL stokers are indispensable in large plants using coal for fuel, from the standpoints of economy, efficiency and capacity to carry heavy overloads. Mechanically-stoked boilers are more nearly smokeless in operation than are hand-fired boilers, and generally smokeless combustion means more efficient combustion.

Cheap fuels, which are usually inferior fuels, can be burned on stoker grates when they could not be successfully used in a hand-fired furnace. This makes available local fuels, such as screenings; coal high in moisture; high in ash; high in sulphur or iron; and some grades of lignite, particularly those containing not over 30 per cent of moisture. While it is true that mechanical stokers will burn all kinds and grades of inferior fuels, all stokers will not burn every kind of low grade fuel. Some stokers are designed for anthracite and coke breeze. Others for high grade bituminous steam coals. Certain types require coal high in ash content, so that the ashes will protect the grates. Mechanical stokers are built for the burning of mine refuse or "culm" containing as high as 30 per cent of ash. Semi-bituminous and semi-anthracite are the fuels for still other stokers. Coal with a low-fusing ash cannot be burned on grates which agitate or disturb the fuel bed, as it will cause clinker, so every plant being designed must have selected for it a stoker designed for the fuel it is intended to use. Free-burning coals burn best when the fuel bed is undisturbed. Coking coals, on the other hand, require fuel bed agitation. High ash coals must have the ashes removed continually from the grate. In low ash coals this is not necessary. Clinkering coals must not be agitated or clinker formation will result. With non-clinkering

coal, agitation has a very much less troublesome effect.

Stokers are built to operate under natural draft or forced draft, and for different rates of fuel combustion and for different draft pressures. So far as efficiency of combustion is concerned, however, the different types of stokers will give approximately the same results, all conditions being equal, provided the right type of stoker is installed for the kind or grade of fuel to be burned and the conditions under which it will operate. These conditions must be determined first, however, and a type of stoker selected that will fulfill the requirements. A mechanical stoker makes possible the use of cheaper fuel with as much or even more economy than can be obtained under operating conditions in hand-fired boilers with a better grade of coal. Or, using the same grade of coal, the mechanical stoker will burn it with a greater degree of efficiency, so that the boiler will develop more power per pound of fuel, which is economical.

A greater amount of coal can be burned per square foot of grate on a mechanical stoker than in a hand-fired furnace, consequently allowing for a greater overload. A plant that must be operated frequently at ratings of 300 to 400 per cent, which is from three to four times the rated capacity of the boilers, based on the manufacturers' rating of one horsepower to 10 square feet of heating surface, must be equipped with a mechanical stoker and forced draft so it can be driven at the required rate. In large plants, operated mechanically with coal hoppers for feeding the stokers and automatic ash removal, the labor costs are reduced. One man can tend as many as 1400 developed horsepower as

against one man to every 400 or 500 developed horsepower in hand-fired plants. In small plants, upon the other hand, the saving in labor over hand-fired boilers is negligible. It follows that mechanical stokers are not of so great an advantage in small plants, unless the saving in fuel will be large, or unless they have to be installed to prevent the smoke nuisance. Hand-operated

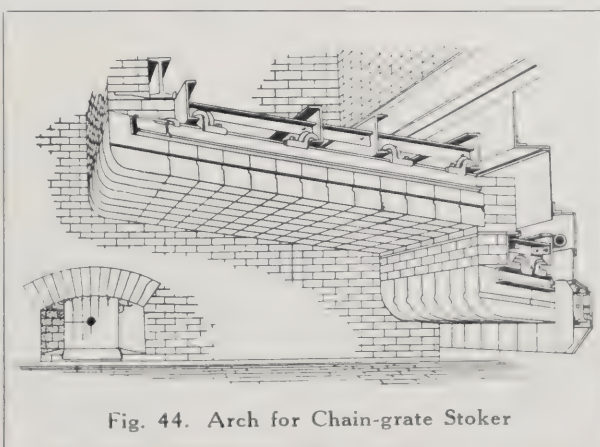


Fig. 44. Arch for Chain-grate Stoker

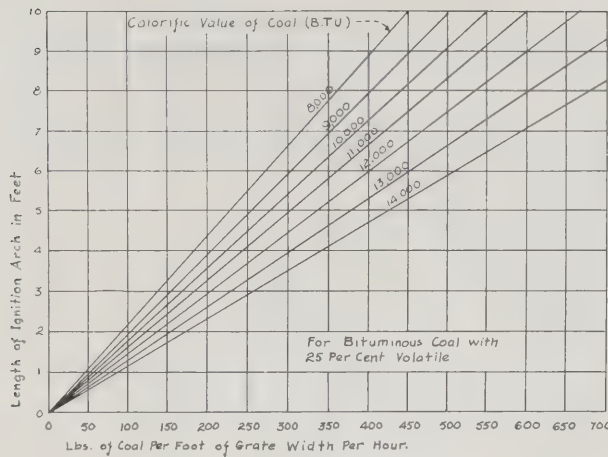


Fig. 45. Arch Lengths and Ignition Rates

stokers, however, can often be installed in small plants and effect both greater efficiency and higher economy of operation in addition to increasing the capacity. Much depends upon the size of the plant.

The expense for upkeep is naturally higher for mechanical stokers than for hand-fired boilers, and this cost, together with the cost of power for operating the stokers, must be charged against them. The power for operating stokers may be either electrical or steam. It requires about 2 per cent of the boiler rating for steam to operate mechanical stokers with natural draft, and from $2\frac{1}{2}$ to $3\frac{1}{2}$ per cent for forced draft. Another loss in stoker firing is the ashpit loss.

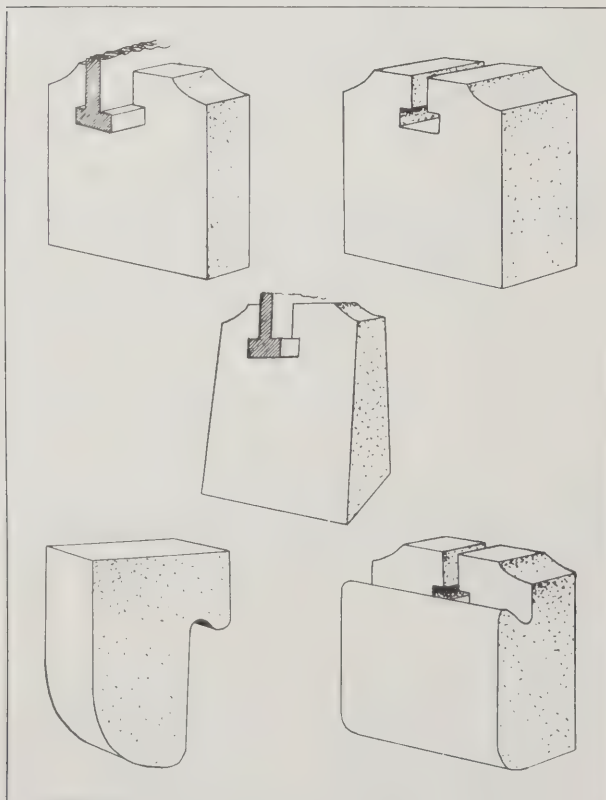


Fig. 46. Special Blocks for Flat-arch Construction

A certain amount of fine coal sifts through the grates into the ashpit. This loss is sometimes as high as 6 per cent and will average about 3 per cent. In some cases it has been kept as low as 1 or 2 per cent.

Mechanical stokers for coking coals are designed to burn coal by the progressive or coking process. Coal, whatever its grade, contains five major ingredients. They are: water, known as "moisture"; tar; coke; ash and impurities such as iron, sulphur, lime and magnesia. Of all the ingredients, the tar and the coke alone are the combustibles. The other portions are what cause trouble in firing. The tar, when distilled in the high temperature of the furnace, becomes gas, which mixing with air burns freely. It is what is known and generally spoken of as the volatile, and amounts to as high as 48.40 per cent, or nearly one-half the weight of the fuel. In anthracite, on the other hand, the tar or volatile is sometimes as low as 2.48 per cent. Owing to this difference, bituminous coal which is rich in tar is known as a "high volatile" coal, while anthracite which is poor in tar is known as a "low volatile" coal. The coke in some bituminous coals is of as low a proportion as 38.75 per cent, while in some anthracite it is as high as 86 per cent. Coke in coal is spoken of as "carbon," so that a bituminous coal is "low" in carbon content, while anthracite is "high" in carbon.

Iron and sulphur, also lime and magnesia, cause clinker. Ash, the residue after burning, clogs the grates, shutting off the supply of air unless removed. Moisture must be evaporated, and it requires as much heat to do so in the furnace as though in the boiler.

In the burning of coal, melting and distillation of the tar take first place. When introduced to the high temperature of the firebox, the light volatiles or oils are first distilled. Next comes the heavy tar, and finally, when all volatiles are driven off, the carbon is consumed, leaving only the clinker and ash which represent the impurities originally existing in the coal. The volatiles burn with a long flame, and as they distill rapidly they fill the combustion chamber and baffle passage between the water tubes of the boiler. The coke burns with a vivid glow but with comparatively little flame. The volatiles are known as the "long flame" combustion, the cokes as "short flame." As anthracite coal is almost all fixed carbon, there is so little volatile to drive off that it does not lend itself readily to the coking or progressive method of firing; therefore the same saving cannot be effected by using anthracite as can be had by burning all the different grades of bituminous coal.

In the coking process, which is the mechanical-stoker process of combustion for coking coals, the coal is fed in a continuous stream of uniform depth of bed and the full width of the stoker grate. The coal is then carried progressively forward by a movement of the grate or some of its parts. As soon as the coal enters the furnace, heat drives off some of the volatile, which is ignited and kept burning by the heat of the fire-brick arch and walls. The coking

process is completed before the fuel has traveled far, and then the carbon burns progressively until the moving mass reaches the place where the ash is discharged. When, therefore, a furnace and stoker are properly designed, the carbon and volatiles have yielded their heat by the time they reach this point, and the ash is automatically discharged into the ashpit or hopper below. This describes the coking process.

Arch for Chain-grate Stoker. The proper coking of coal in the furnace and the quick ignition of the gases depend upon a hot fire on the rear portion of the grate and a properly designed arch to deflect the heat from the hot fire onto the incoming coal. In hand firing, the green coal is thrown on top of glowing coals and readily ignited. With chain-stoker feed, a constant stream of green coal is fed into the furnace at one end of the grate or stoker, and against a bed of green or only slightly coked coal. The heat to coke this coal and ignite the gases arising therefrom must come from the back of the furnace and the arch. The design of the arch depends upon the type of stoker to be installed. In the chain-grate stoker, it is flat, as shown in Fig. 44. The variables which affect arch design are the amount of coal to be ignited per foot of stoker width per hour, the percentage of volatile in the fuel, and the heat value of the coal. The longer the stoker grate and the greater the amount of coal to be burned per linear foot of grate per hour, the greater must be the ignition effort. Therefore, all other items remaining constant, longer arches must be provided for higher combustion rates and for longer stokers.

In the chart (Fig. 45) can be found the arch lengths with the corresponding ignition rates possible with a variety of bituminous coals containing 25 per cent or more of volatiles. The use of the chart is thus explained. If it is desired to obtain a combustion rate of 35 pounds of coal per square foot of grate surface per hour, on a chain grate having an active grate length of 10 feet, and coal with a heat value of 10,000 B.t.u., the ignition rate would be, $35 \times 10 = 350$ pounds per hour. Trace upward on

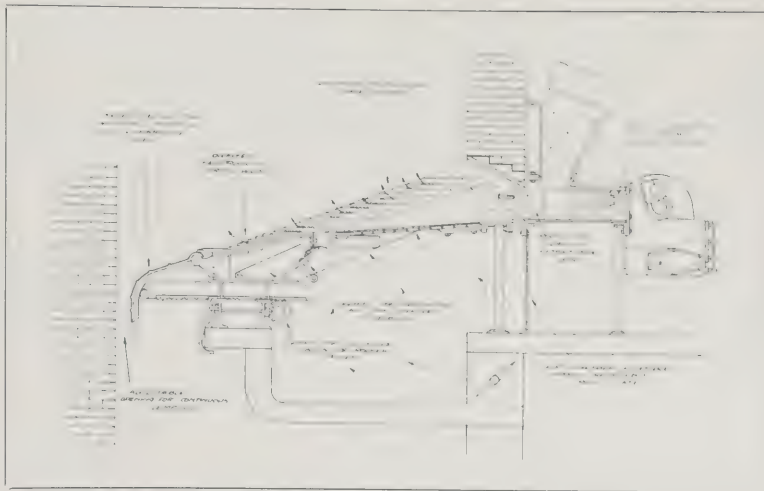


Fig. 48. Section Through Under-feed Stoker

the chart from the ignition rate of 350 pounds to where the line intersects the 10,000 B.t.u. coal line, and then level over to the left hand margin. This will show that an arch 6.3 feet long will be required. The graphs shown are based on actual performances with fuel of high volatility, under close observation.

Height of arch is equally important in the design of a stoker furnace, and the slope is as important as the height. It is found that the arch must have a pitch upwards toward the rear for the best results, and that it must have a definite height above the fuel bed. Experiments at all heights from zero to 24 inches above the top of the fuel bed indicate that for average conditions a height of 15 inches will give the best general results. As to the slope, experiments so far have not determined the exact pitch, but they have determined the limits between which the best results can be obtained. A pitch of 2 inches per foot is better than 1 inch. At a pitch of 4 inches and over there is a slight tendency to smoke. The best pitch, then, lies somewhere between 2 inches per foot and 4 inches per foot. It is probably around 3 inches per foot, which would be quite a fair average.

Parabola arches, when properly designed and proportioned to height, length and pitch, give very intense ignition results. They are hard to keep in repair, however, and if built as true arches, they exert a thrust, often very decided, on the side walls.

The limiting factor in the design of a stoker is the ability of the arch to ignite the coal. Arches can ignite as high as 60 pounds of coal per square foot of grate surface, which limits the rate of combustion to that amount. Stokers are designed to burn fuel at different rates, ranging anywhere from 20 to 60 pounds per square foot of grate surface per hour, and the ignition arches must be designed to ignite the fuel at the maximum rate at which it is designed to be used, if the best results are to be obtained. Special blocks

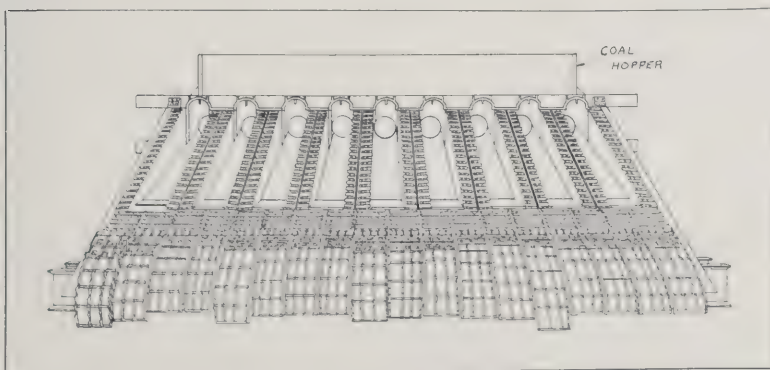


Fig. 47. Under-feed Stoker

are made for flat-arch construction. A number of flat-arch blocks of different shapes are shown in Fig. 46. The blocks are suspended from the lower flanges of I-beams, or from special T-beams on which they are strung. They interpose the full thickness of their bulk between the iron or steel beams and the interior of the furnace, as the illustration shows.

Under-feed Stokers. The distinguishing feature of under-feed stokers is, as the name would imply, that coal is thrust into the furnace under the coals and ashes already there, instead of on top, as in hand-firing, or continuously at one end at the top as in chain-grate firing. One type of under-feed stoker is shown in Fig. 47. Coal enters the furnace through a series of retorts, forced in from the hopper by a plunger. The retorts are separated from one another by a series of tuyeres through which heated air enters the furnace to carry on the process of combustion. The tuyeres forming the sides of the retorts are not stationary. They are made up of a series of plates, one on top of another, with air outlets between. These plates are reciprocating, those forming one side of a retort moving forward as the other side moves backward, thereby moving the fuel down the incline and thickening the fuel bed. At the lower end of the incline, near the bridge wall, the fuel bed

passes on to over-feed grate bars, then to reciprocating plates for agitating, crushing and discharging the ashes. The retort sides operate the over-feed grates.

Over-feed Stokers. A mechanical stoker which operates on natural draft and is known as a side over-feed, or opposed type stoker, is shown in Fig. 49. At each side of the furnace extending from front to rear are coal magazines from which coal is fed to the furnace. To enter the furnace, coal must pass through a throat formed by a movable "stoker box" which rests upon and moves horizontally over a coking plate or ledge. The distance of travel of this stoker box regulates the feed to that side of the furnace. As the coal leaves the magazine it rests for a short time on the coking plate. Here the volatile gases are driven off and mixed with pre-heated air delivered through the arch-plate air-ducts.

The grates are made in pairs, one fixed and the other movable. The fixed grates rest at their upper ends against the coking plates. The lower ends are supported by the grate bearers. The movable grates are pivoted at their upper ends and actuated at the lower ends by a rocker shaft. This alternate movement breaks up the fuel bed, prevents avalanching, keeps the grate clinker free, and advances the ash gradually to where it is removed by the clinker grinder.

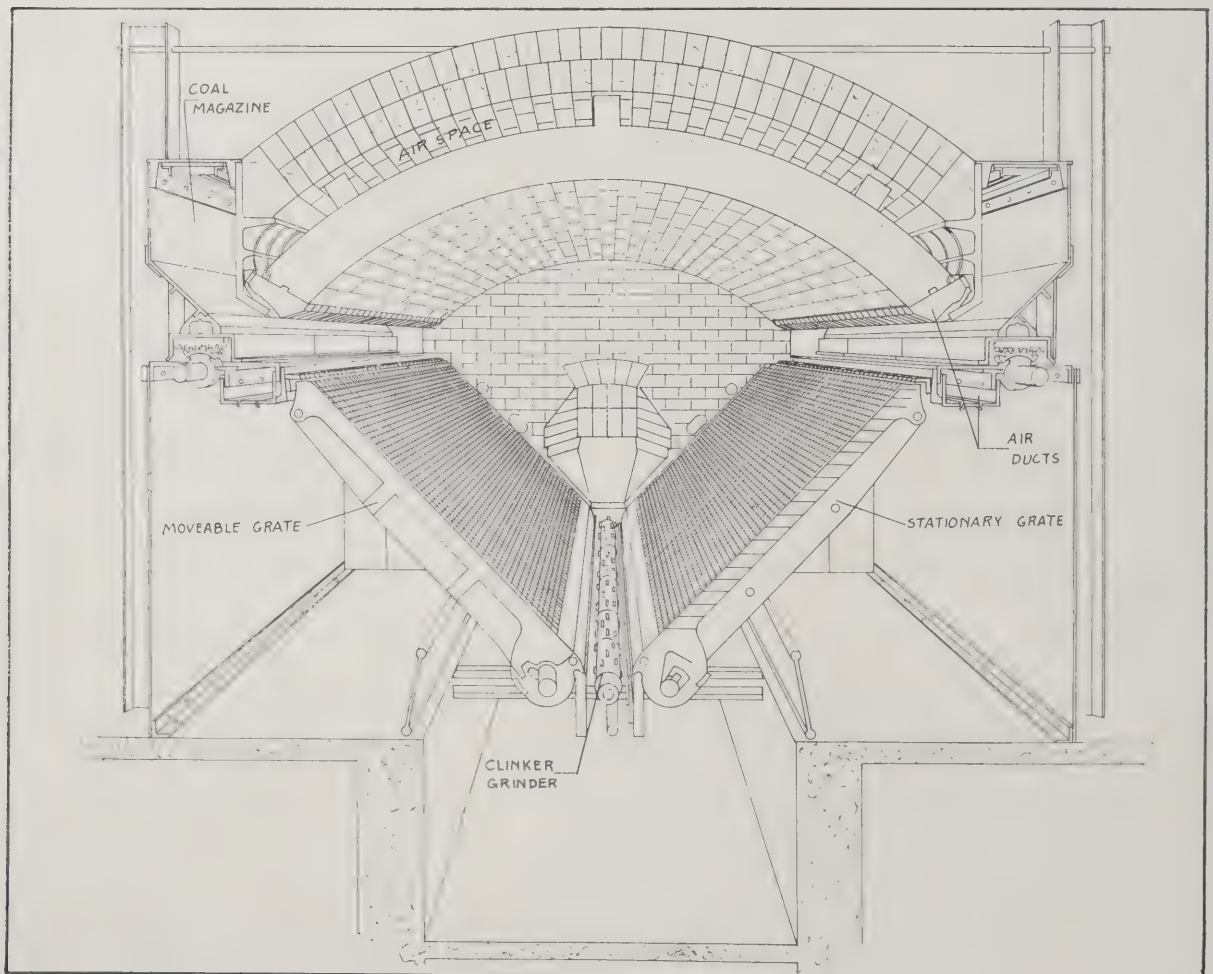


Fig. 49. Side Over-feed or Opposed Type Stoker

SMALL BUILDINGS

American Church Architecture

By AARON G. ALEXANDER
Of the Office of Hobart B. Upjohn

RECENTLY I heard a statement attributed to a well known architect to the effect that there was no worthy church architecture in America until about 25 years ago. I wonder if that statement is true or even fair. To one who has for some years been intimately connected with church architecture and all the conditions which govern this particular type of building, it seems that it is not true. I believe that if one were to go back to some of the old churches and study them as to their architectural compositions, taking into consideration the conditions of the times when they were built and the number of churches erected during their periods, one would find the average good compared with that of any other type of building. Certainly, when one takes American church architecture, which is essentially Colonial, into consideration, it is easy to find many gems of merit, so many, in fact, that today we are continually referring back to their graceful spires and interiors for inspiration. They were of the meeting house type, but there is no denying that some of them are beautiful and stately. On the other hand, there are many who hold the view that to have the proper sense of dignity and religious character, a church can be only of Gothic design and must be built of stone. The Gothic style is, of course, not that upon which our earliest American architectural traditions are founded, so I believe this statement is made more often by those whose thoughts turn to the richness and beauty of craftsmanship and variety of materials so characteristic of Gothic, rather than to the simple refinement of our early Colonial architecture.

We, as Americans, are perhaps too much given to the habit of looking at a building and considering its materials, expensive stone tracery and leaded glass, costly interiors, furnishings, etc., and then at its general architecture. If we find the building is not a sort of jewel box, with stone walls inlaid with marble or stone trim, with foreign leaded glass and the interiors of carved wood with wrought iron fixtures, we feel like passing it by and hunting for one that is, as I might say, worthy of our attention. In other words, if we see a church building of Gothic design built of brick with wood tracery windows, we are not likely to consider the conditions which caused the architect to adopt these materials, but instead we simply pass on with a remark criticizing him who did such a thing. On the other hand, I

believe that any building that is built as a frank, honest effort with the funds available deserves attention. It may be built of materials which are not wholly in keeping with the particular style of architecture, and yet there may be many lines and details that are of interest. I do believe, therefore, that it is safe to say that we have advanced more in church architecture in the past 25 years than our predecessors did in the preceding 25 years, and the reason is simply that we have kept in stride, as it were, with the times. One reason for this is that in the past there were not the same opportunities for studying the old churches abroad nor such facilities for building as we have had in later years.

At the beginning of this article I speak of the conditions besetting an architect in the practice of church architecture, and I might mention what these are:—the funds available; the dictation by committees; and the general feeling in the past on the part of not only the architect but also of the contractor that a church is a poor sort of client, which feeling is invariably productive of poor design as well as poor construction. The most difficult problem an architect has is the designing of a small church, since the funds are generally unequal to the requirements, and even though the design may be rather good, the architect finds it necessary to specify materials that he would not use if he did not absolutely have to.

As church architecture has kept pace with the times, we now find the different denominations forming "boards" for the aid of small churches to help raise funds and finance buildings. We read in the press, from time to time, when general assemblies of the clergy are held, that the heads of the denominations deplore the poor average church architecture, and it is interesting to note the reasons that they put forward. Recently I read two addresses by bishops, who, instead of blaming the architects, placed the blame mostly on the fact that the building committees have too much to say as to designs and plans, and they recommend that the committees confine their efforts to financing and to the selection of proper architects. From my experience, I believe that following this advice would be a stride forward.

I do not say this with any sarcasm. It is natural that a man competent to serve on the average building committee should feel that he is quite capable of telling the architect what to do instead of just simply stating requirements. The committees are

generally made up of members of the congregation who are intimately connected with, and therefore are thoroughly conversant with, different branches of the church activities, and are for the same reason interested each in only his particular department. One is interested in the Junior Department, another in the church, another in the organ, etc. Considering that committees are made up of such men, one can readily see that an architect has his hands full, and also why I heartily agree with the bishops' statements. Of course, such conditions as these enter into all classes of construction, but more so I believe in church work, because there are more people intimately connected with such a building, and a church is a sort of local community enterprise in which everyone has to be considered. Therefore, it behooves an architect when starting on a church to impress the committee with the fact that he is really familiar with all the different angles and phases of a church plan, and to do this in such a way as to gain the complete confidence of the different members of the committee. Once he has done this, he has half the battle won. If he really is not familiar with all the details, he should seek the advice of the church boards, already referred to, previously to appearing before the committee, or else associate with him an architect who has made a successful specialty of church work. When one considers that a church building is designed and planned in accordance with past history and the development of worship in the particular denomination to which the church belongs,

one can readily see that church architecture means not simply cribbing a former plan, but is a matter of studying the history of the church and applying it to the needs of the particular design one is working on.

As to the returns from a church commission, it is true that the remuneration is not as high as that from commercial buildings, but, on the other hand, it is not true that the poor returns are due to non-payment on account of inability to raise funds. I am finding more and more, as time goes on, that the contractors who in the past have held this view and refused to bid are realizing that times have changed. It is now possible to make a selection from a list of reputable contractors, and to assure the architect of having his ideas carried out as he wants them.

I recall hearing not long ago that a well known architect who had never built a church had been awarded a commission for a Gothic church, although he had always specialized in Colonial architecture of an entirely different class of building. From my experience, I believe it is safe to say that he will do himself more harm with a certain group before he gets through than if he had turned the commission down or else associated with him a fellow architect. I might suggest to this architect that the two books entitled, "American Churches" would be very helpful. They were published in 1915 and cover recommendations on everything that enters into this work.

I am going to devote myself to passing along to my fellow architects some few suggestions as to handling the problem of a church building. First of



St. Luke's Church, Katonah, N. Y.

Hobart B. Upjohn, Architect

all, the proper recommendation to the committee. Almost all the different denominations have architectural service boards whose heads have drawn up certain recommendations which are always available for the asking, and are often helpful. After absorbing as much of this information as possible, first study the problem not so much on the money side as on the requirement side. Get the average attendance of the church for the past five years, and balance it with possible growth in the new church building. Study the essential requirements of the denomination in question, and ascertain the type of service in use; the number in the choir and the choir's location. In this connection, let me say that probably the most satisfactory arrangement is that of the choir stalls at either side of the chancel, with pulpit and reading desk on either side of the chancel arch, and other furniture grouped in the apse in accordance with the demands of the denomination.

The organ console should be placed in such a position that the organist is screened from view of the congregation, but so that he can see the choir without having to use the old fashioned mirror arrangement. I might say a word here as to the organ. A great many architects believe that an organ can be built to fit into any space, and that the console is about the size of a table. This may all be true for an installation in an existing church, but the organ that is built under such conditions has not as good a tone as it would have had if its design and space requirements had been taken into account originally

by the architect of the building. Try to have an organ chamber with a ceiling height of not less than 17 feet, and if that is not feasible, have one dimension of the floor plan that size, the other 9 feet, with the ceiling 12 feet. Avoid "pockets" by giving the organ at least 95 per cent of opening on one side into the auditorium, the opening extending from the floor to as near the ceiling as the architecture of the interior will permit. The organ screen can be designed so that the opening is not apparent to the eye but so that the sound can escape, which is the main thing to consider. The dimensions given apply to the average medium sized organ. The larger the organ, needless to say, the larger the space required. The motor or blower room should be situated in the basement in a dust- and soundproof room and connected to the organ chamber and console with wind pipes and conduits, the correct sizes of which can be obtained from any of the organ manufacturers.

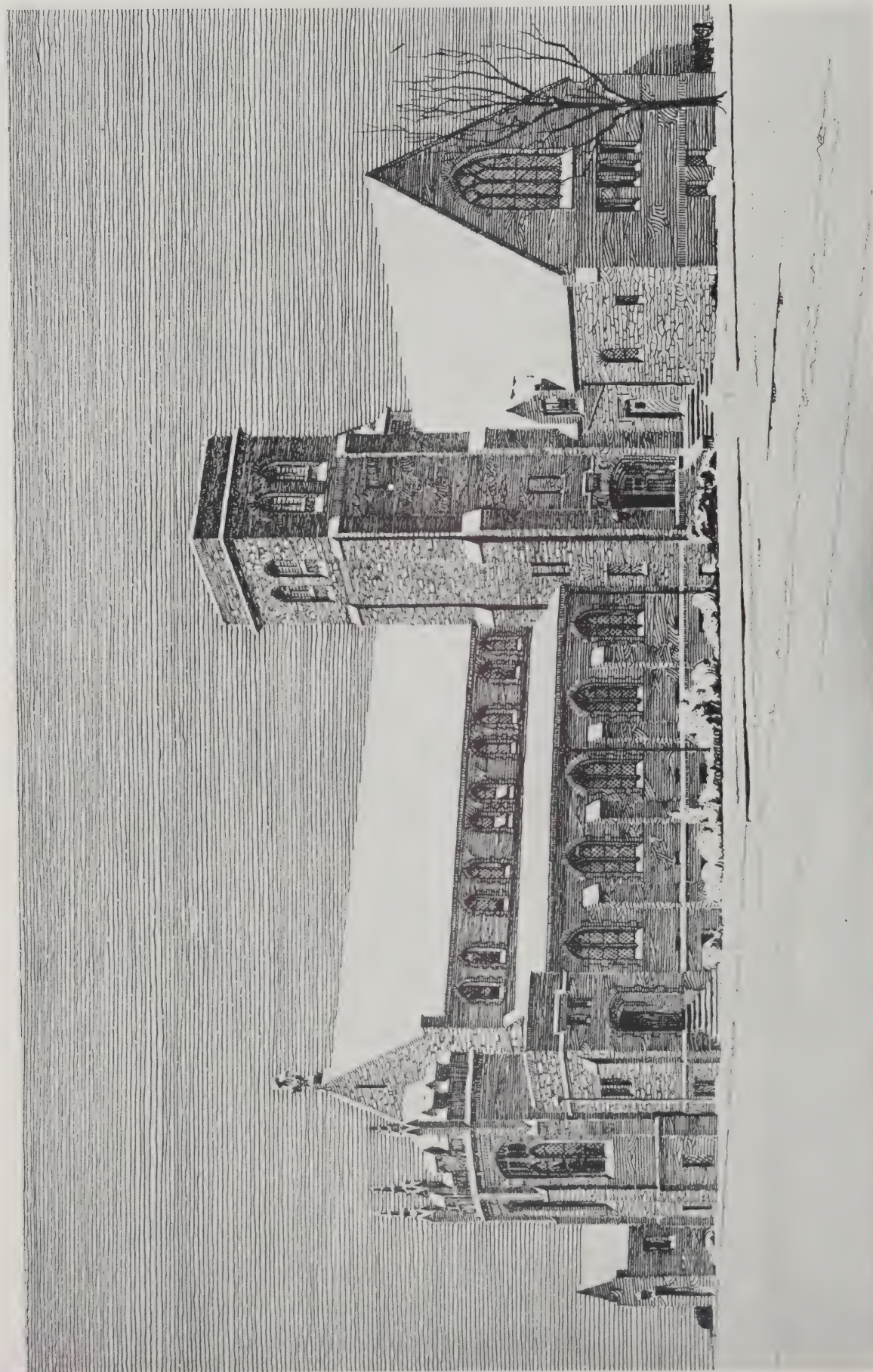
As for the designing of furniture and equipment, this would take more space than could be given it here, so let it suffice to refer again to the books already mentioned. They contain chapters devoted to the pulpit, lectern, pews, altar, etc., and by consulting them, one cannot go far wrong.

When the requirements are determined, the design of the church can be started. There is a growing tendency among the different denominations to favor certain styles, but whatever style the architect adopts, he must employ materials that mean permanence and necessitate the smallest possible upkeep cost. A

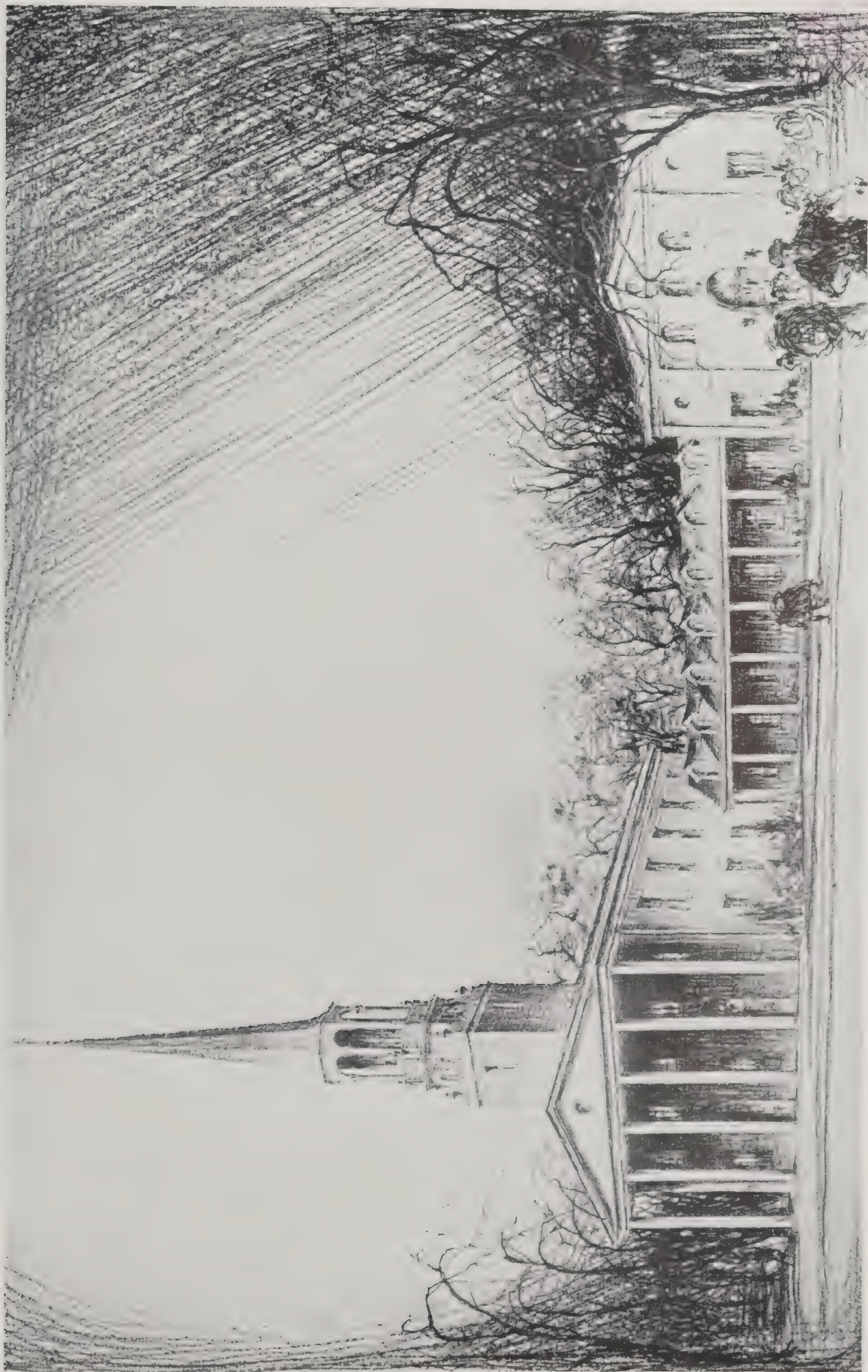


Sunday School Building, Church of St. James the Less, Scarsdale, N. Y.

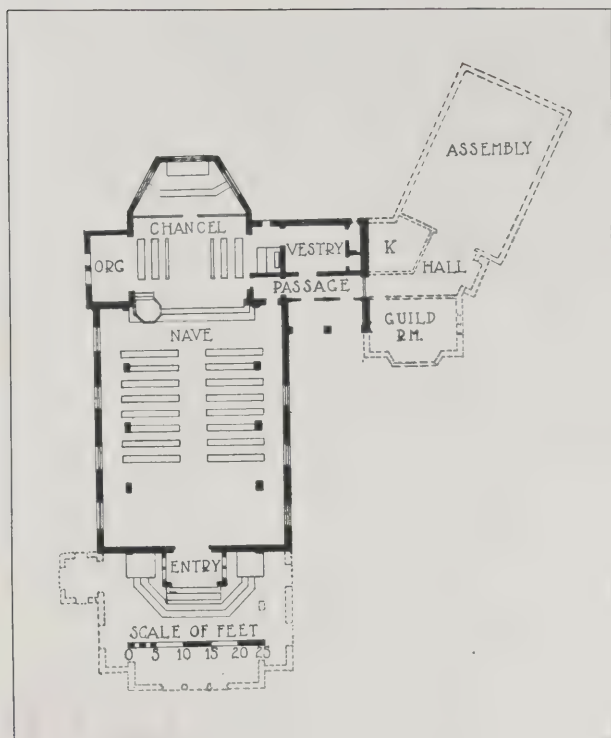
Hobart B. Upjohn, Architect



FLATBUSH PRESBYTERIAN CHURCH, BROOKLYN
ALTERATIONS BY HOBART B. UPJOHN, ARCHITECT



PRESBYTERIAN CHURCH, FAYETTEVILLE, N. C.
HOBART B. UPJOHN, ARCHITECT

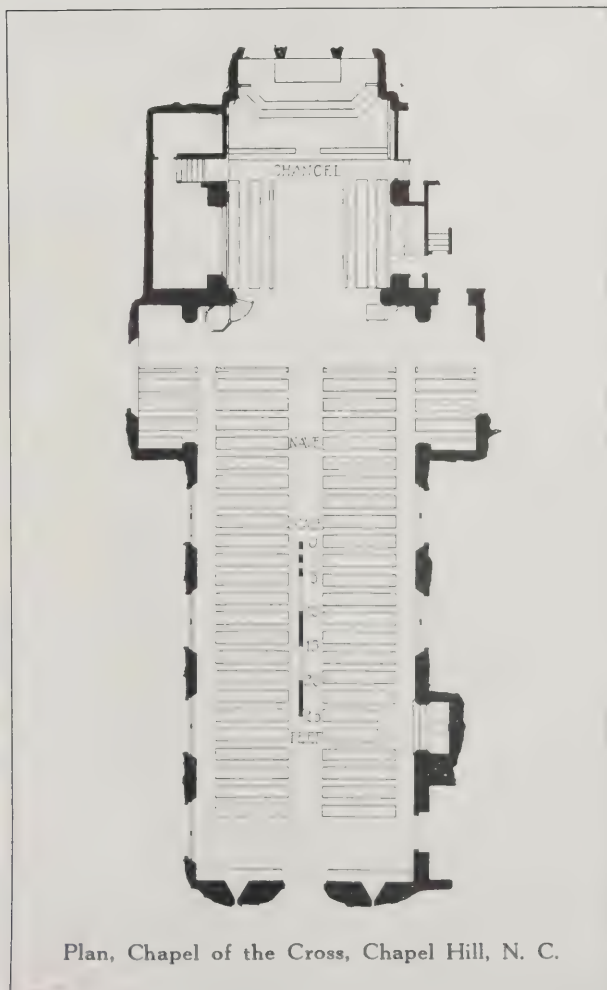


Plan, St. Luke's Church, Katonah, N. Y.

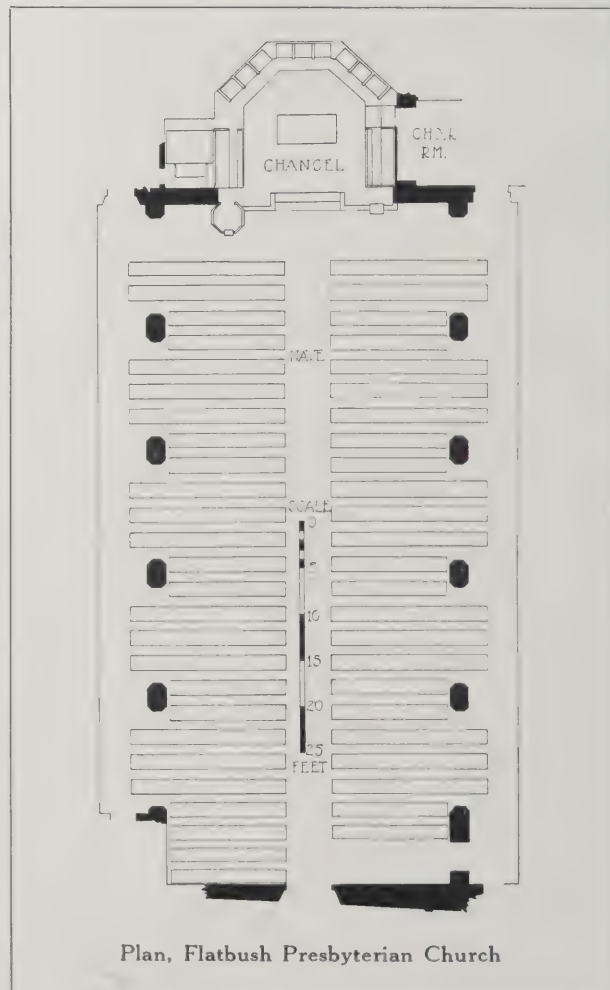
church is not just a building in which to have meetings. It must have dignity, character and permanence as its inherent qualities. The use of masonry in the walls is likely to give these qualities, whereas wooden walls fail to give the same effect and should not be considered unless financial considerations absolutely compel their use. On the other hand, wooden ceilings and exposed rafters add much warmth and charm to a stone or rough plastered interior and are in accordance with the best architectural tradition.

The plan of the church, parish house and Sunday School building should be suited to everyday and departmental use. The old "Akron" plan of small classrooms opening from the main auditorium, separated by folding doors, is a "one-day" or "Sunday" building. Each department should have a separate room, designed with a decorative interior so as to attract members. A department will grow more rapidly under such conditions.

If the funds at hand do not meet the needs, design the building so that it can be added to in the future. Take, for instance, the plans of St. Luke's Church, Katonah, N. Y. This is a small church, designed in a simple English style, with provision for future extension as shown upon the plan by the dotted lines. It was found that the present congregation numbers about 100 and with the new church would number



Plan, Chapel of the Cross, Chapel Hill, N. C.



Plan, Flatbush Presbyterian Church

150, and in the next five years it will undoubtedly increase to 250, since the community is growing. Additional seating is to be taken care of by simply extending the present front wall and adding two bays to the length of the nave. The dotted lines on the plans of the parish house adjoining indicate the future additions to the Sunday School rooms. The building is planned on the basis of seating 150, and is a complete, temporary unit, but the committee knows how to take care of the future without having to build some sort of a "bump" out on the side. Additional seating can often be provided in a balcony, but as this means a higher building and therefore more cubage, it is not especially feasible where the saving of costs is important. This church at Katonah was erected in 1922, and is of field stone up to the water-table, with the rest of the walls of timber and stucco in half-timber patterns. A comparison of this church with the Sunday School building of the Church of St. James the Less, at Scarsdale, N. Y., will illustrate readily the point about dignity and permanence made here. The boiler room of the church at Katonah is placed under the chancel, which position saved in the excavating, owing to the extra headroom necessary to raise in the chancel floor above that of the nave. The cost of general construction at Katonah, exclusive of furniture, was



Nave, Holy Trinity Church



Holy Trinity Church, Greensboro, N. C.

Hobart B. Upjohn, Architect

39 cents a cubic foot. The church is fortunate in being able to meet its present requirements and in knowing that it can enlarge the church and parish house without in any way injuring their harmony.

Alterations and additions to existing buildings are other things that the architect must continually consider. One difficult part of this is the matter of quoting an intelligent price for such work. The only sure way in the case of additions and alterations is to obtain a preliminary estimate from a reputable contractor. The cost of the new part can be figured on the cubage. The Flatbush Presbyterian Church, Brooklyn, which is illustrated here, is a case in point. The main church building and tower are new, but the part at the right is the old church which was turned into a Sunday School building. These alterations consisted of the installing of a second floor in the old church auditorium and dividing the space into classrooms, and the cost of this was about a fifth of the total contract for the enlargement and new building. The main church is constructed with stone walls, imitation stone trim, slate roof, oak trim inside, with stone arches and cypress ceiling in nave. The gymnasium with stage, locker and shower rooms, and the kitchen adjoining are situated in the basement under the main church. Although a Presbyterian church, the chancel is laid out on much the plan common in Episcopal churches, with pulpit, lectern, etc. The church building was built in 1923 at ap-

proximately 45 cents per cubic foot, exclusive of furniture or the many varieties of equipment necessary.

Taking up a different style of architecture, the Colonial, we find that, for reasons of general construction, this type of building can be usually built more economically, say, from five to ten cents per cubic foot less than the costs of the churches already described. In writing these paragraphs I have merely scratched the surface, in the hope that I may, in a way, bring to the attention of some architects the problems that church architecture entails. As a help to some in quoting to a committee the cost of a building, I believe one can safely count on these cubic foot costs, exclusive of furniture and equipment:

A small, simply designed English type church, 35 to 40 cents a cubic foot.

A Gothic church, with stone walls and stone trim, 47 to 50 cents a cubic foot.

A simple Colonial building, 40 to 45 cents a foot.

A more pretentious Colonial design, 42 to 48 cents a cubic foot.

Use is frequently made of the so-called Colonial style, indeed, wholly because of its economy. Detail may be properly developed in wood rather than in real or artificial stone, likely to be considered necessary in using Gothic forms; then too the very simplicity of design and plan which characterizes a Colonial building is well suited to certain surroundings. It is a type which is flexible and easily handled.



Sunday School Building, Church of St. James the Less, Scarsdale, N. Y.

Hobart B. Upjohn, Architect



Photos, Kenneth Clark

FIRST CONGREGATIONAL CHURCH, NORWALK, CONN.

CHARLES C. GRANT AND JERAULD DAHLER, ARCHITECTS

AMONG several splendid examples of churches in the Colonial style built within the last two years, there is none which surpasses in charm and refinement of detail as well as excellence of scale and composition; the First Congregational Church on the

Green at Norwalk, Conn. A little circular published at the time it was proposed to build a new church to replace the old First Congregational Meeting House of Norwalk, says that the new church structure is to be in keeping with the best traditions of the Con-

FORUM SPECIFICATION AND DATA SHEET—104

First Congregational Church, Norwalk, Conn.; Charles C. Grant & Jerauld Dahler, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Fireproof. Steel trusses, floor beams, and tower frame. Hollow tile and brick walls. Reinforced concrete floor slabs.

EXTERIOR MATERIALS:

Clapboards; wood trim.

ROOF:

Slate.

WINDOWS:

Double-hung, wood. Tinted glass.

FLOORS:

Cork tile on concrete.

HEATING:

Recirculated hot air.

ELECTRICAL EQUIPMENT:

Concealed, cove lighting in auditorium.

INTERIOR MILL WORK:

White wood, painted. Doors, mahogany.

INTERIOR WALL FINISH:

Paint.

DECORATIVE TREATMENT:

Paneled walls; run plaster moulds.

SEATING CAPACITY:

About 520.

APPROXIMATE CUBIC FOOTAGE:

356,500.

COST PER CUBIC FOOT:

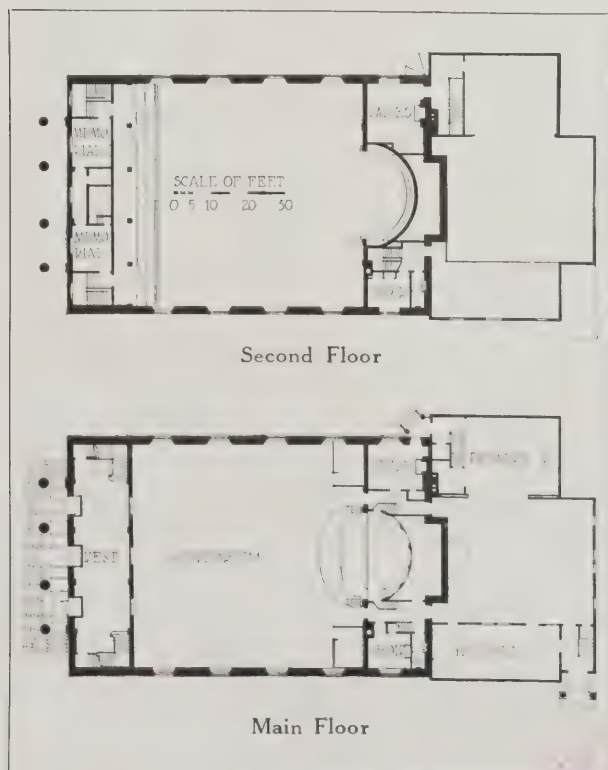
Approximately 45 cents.

DATE OF COMPLETION:

April, 1925.

gregational Church; that the Ionic portico and slender, graceful spire are to follow precedents established by the best examples of Colonial churches in New England, and that the portico with its white marble platform and steps is to shelter three main entrance doors opening into a spacious vestibule 15 feet wide by 40 feet long, with a stairway at each end leading to the gallery across the end of the main auditorium; that three large glass doors will lead from the vestibule into the main auditorium, a room 62 feet square, with a seating capacity of 420 on the main floor and 180 in the galleries, making a total of 600 sittings; that the interior architecture of the auditorium will be designed after the best types of

old churches of the colonial period; that a wide, spreading, elliptical arch will frame the pulpit platform and apse-like chancel, back of which will be the low choir gallery and organ console; that directly back of this chancel, but concealed from view, will be the organ itself; that choir rooms, a pastor's study, a women's parlor and rest room and a memorial room over the entrance vestibule will complete the plan of the church; that the building will be of reinforced concrete and brick, with the exterior masonry walls covered with clapboards in order to produce the desired Colonial effect of a white painted wooden meeting house. All of these provisions of the original program for rebuilding have been carried out.



Interior, Norwalk Congregational Church



Photos. George H. Van Ande

ST. MATTHEW'S LUTHERAN CHURCH, WHITE PLAINS, N. Y.

W. J. CHERRY and H. E. MATZ, ARCHITECTS

BUILT of rough stone laid up with irregular joints, the exterior of this church possesses a roughness of texture perhaps a little inconsistent with the refinement of detail shown in the cast stone Gothic detail of the entrance door and the tracery

of the window above. A treatment of the entrance door and window somewhat more rugged in character would have given greater consistency to the exterior design. The plan shows a long nave, the walls of which are divided into six bays by heavy

FORUM SPECIFICATION AND DATA SHEET—105

St. Matthew's Lutheran Church, White Plains, N. Y.; W. J. Cherry and H. E. Matz, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Stone.

EXTERIOR MATERIALS:

Stone.

ROOF:

Slate.

WINDOWS:

Cast stone.

FLOORS:

Cork and rubber.

HEATING:

Steam.

PLUMBING:

Open fixtures.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

Cypress.

INTERIOR WALL FINISH:

Plaster.

SEATING CAPACITY:

450.

COST OF BUILDING:

\$75,000.

DATE OF COMPLETION:

June, 1925.

roof timbers supported on massive carved wall brackets. The side entrance and the exterior of the minister's study show a consistent and successful use of half-timber, stucco and brick, in contrast to the rough stone main walls of the church. It is

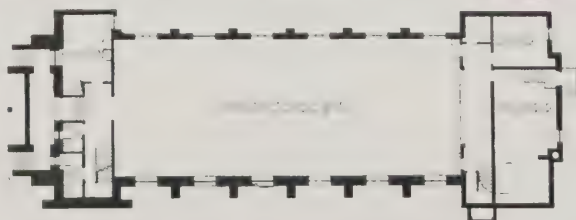
rather unfortunate that the use of the basement for the Sunday School necessitates the introduction of the wide, low windows in the bays of the nave. These windows are not in harmony or in scale with the graceful lancet windows but are, of course, necessary.



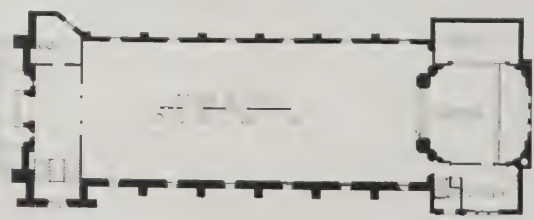
Interior Looking East



Study Entrance



Basement

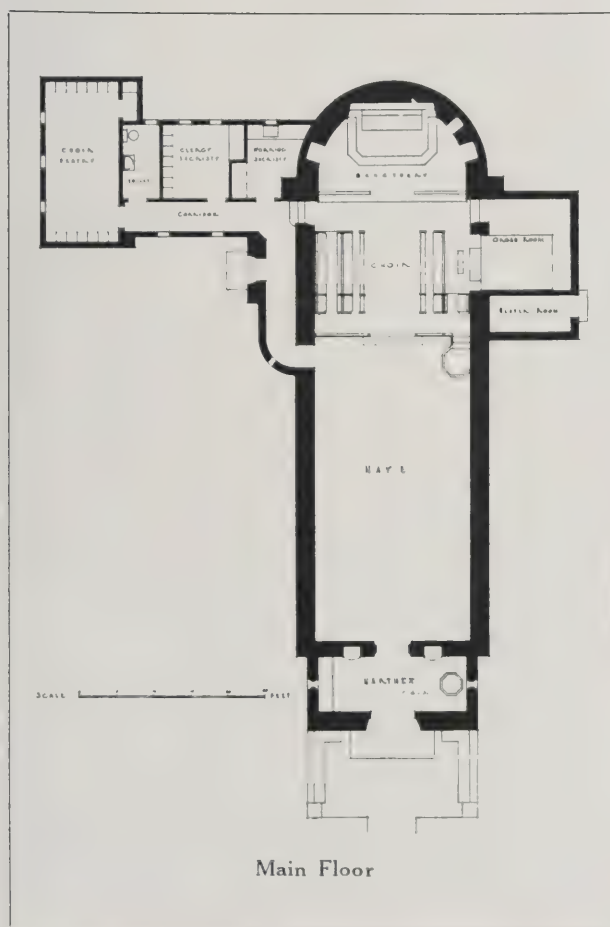


Main Floor



ALL SAINTS' CHURCH, BEVERLY HILLS, CALIF.

ROLAND E. COATE, ARCHITECT



THAT it is possible to be original in the free handling and adaptation of a particular style of architecture without being bizarre or exotic is evidenced by this unique but excellent piece of architectural design. There is unusually fine scale as well as simplicity shown in both the exterior and interior of this adaptation of the Spanish Renaissance style. The narrow arched windows, located high in the exterior walls, and the simple round window in the west front, suggesting a simplification of the typical Gothic windows, are so well spaced and well proportioned that it is possible to give a pleasing importance to the wall surfaces themselves. The importance of the height and the scale of the walls enclosing the nave or auditorium is strongly emphasized by the low tile-roofed entrance porch and wing. The plan is exceedingly simple and direct. An unusually long, narrow nave, terminating in a semi-circular sanctuary, together with the space set apart for the choir, occupies over a third of the interior of the church. On one side of the choir is a good sized organ room and a small heater room, while on the opposite side a narrow passageway connects the nave and the choir with a side entrance to the church and the corridor or cloister leading to the various rooms used by the choir and clergy. In the entrance vestibule, or narthex a simple but massive font with ornamental wrought iron cover is located. Although simple in character, every detail of this church is designed with the utmost care and consideration for scale and style. Stained to imitate Italian walnut, all the details of

FORUM SPECIFICATION AND DATA SHEET—106

All Saints' Church, Beverly Hills, Calif., Roland E. Coate, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Reinforced hollow concrete.

EXTERIOR MATERIALS:

Whitewashed concrete.

ROOF:

Hand-made Mexican tile.

WINDOWS:

No sash in church proper; sash in vestry.

FLOORS:

Tiles.

HEATING:

Hot air, forced system.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR WALL FINISH:

Whitewashed concrete.

SEATING CAPACITY:

Approximately 120.

APPROXIMATE CUBIC FOOTAGE:

74,800.

COST PER CUBIC FOOT:

24 cents, not including furniture.

DATE OF COMPLETION:

May, 1925.

church furniture, such as the pulpit, choir stalls, sanctuary seats and chancel rails, are original and interesting in design on account of the manner in which they indicate a free adaptation of Spanish detail. The use of long wall hangings back of the choir stalls and covering the entire west end of the nave is effective from an artistic point of view, and serviceable from a practical consideration, as they have a very definite use in improving the acoustic proper-

ties of the church. Such height and extent of hard plaster walls uncovered by tapestries or hangings are not favorable to the best acoustic conditions. The rich tones of these hangings are repeated in the dark stained wooden girders and rafter beams of the roof, giving the proper balance of light and dark to the interior design. It is rare to find a church, large or small, designed, built and furnished with such judgment, taste and regard for architectural tradition.



Choir and Sanctuary

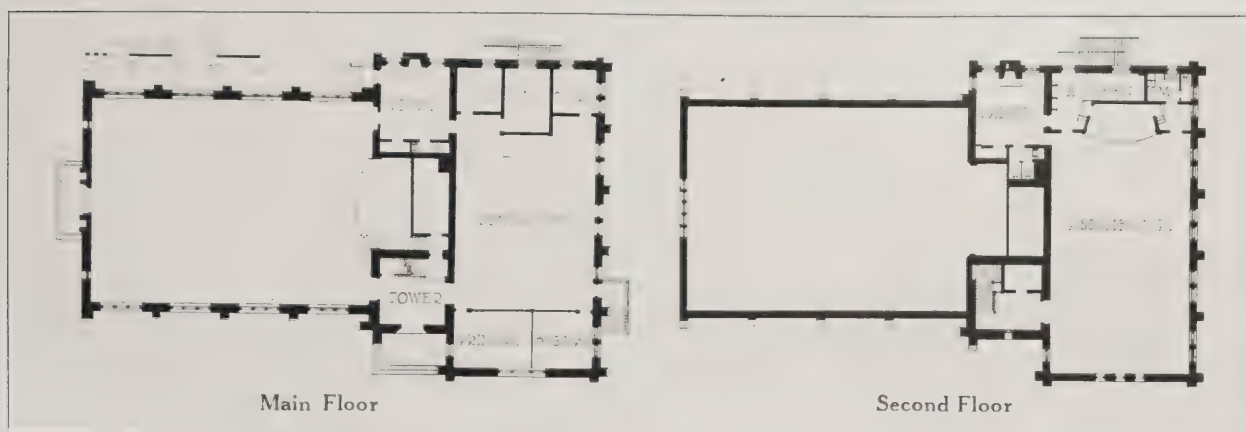


Choir and Nave



Photos. Tebbs & Knell, Inc.

CHURCH OF THE COVENANT, WILMINGTON, N. C.
KENNETH M. MURCHISON, and GAUSE & LYNCH, ASSOCIATED ARCHITECTS



FORUM SPECIFICATION AND DATA SHEET—107

Church of the Covenant, Wilmington, N. C.; Kenneth M. Murchison, and Gause & Lynch,
Associated Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Masonry walls, frame structure.

EXTERIOR MATERIALS:

Seam-faced granite.

ROOF:

Slate.

WINDOWS:

Leaded glass.

FLOORS:

Pine.

HEATING:

Hot air.

PLUMBING:

Cast iron pipe, and fittings with back ventilation.

ELECTRICAL EQUIPMENT:

Cable with outlets for lights, receptacles and switches.

INTERIOR MILL WORK:

Oak.

INTERIOR WALL FINISH:

Caen stone plaster.

DECORATIVE TREATMENT:

Gothic; oak screen on platform.

SEATING CAPACITY:

Main auditorium, 400.

DATE OF COMPLETION:

About June, 1917.

AS an example of simple adaptation of the English parish church, this building at Wilmington is excellent. The seam-faced granite, varying sufficiently in color to obviate all monotony of color and texture, makes a most attractive material for this English type of small church. The interior plan of the building, which includes not only the church auditorium but also rooms for the Sunday School and a large assembly room above, is clearly indicated in the exterior design of the building. The wing of the building occupied by the Sunday School and assembly room is placed at right angles to the church auditorium, the low square bell tower pleasantly breaking the angle between these two parts of the building. The steep roofs are covered with slates of varying shades which harmonize pleasantly with

the color of the stone walls. Limestone is used for the trim, window and door details. The latter show simple Gothic mouldings and treatment in keeping with the general style of the building. The windows of the church auditorium show flat tops and are of sufficient width to well light the interior.

Although not indicated on the plans shown here, a large parish house, designed in a simple Gothic style similar to that used in the church itself, is connected with it by an archway on the side of the church occupied by the minister's study and women's room above. A driveway from the street leads across the churchyard through this archway, making it possible for wedding and baptismal parties to enter through the side door leading into the minister's study. The plan of the church building shows pleasing balance.



Parish House, Church of the Covenant



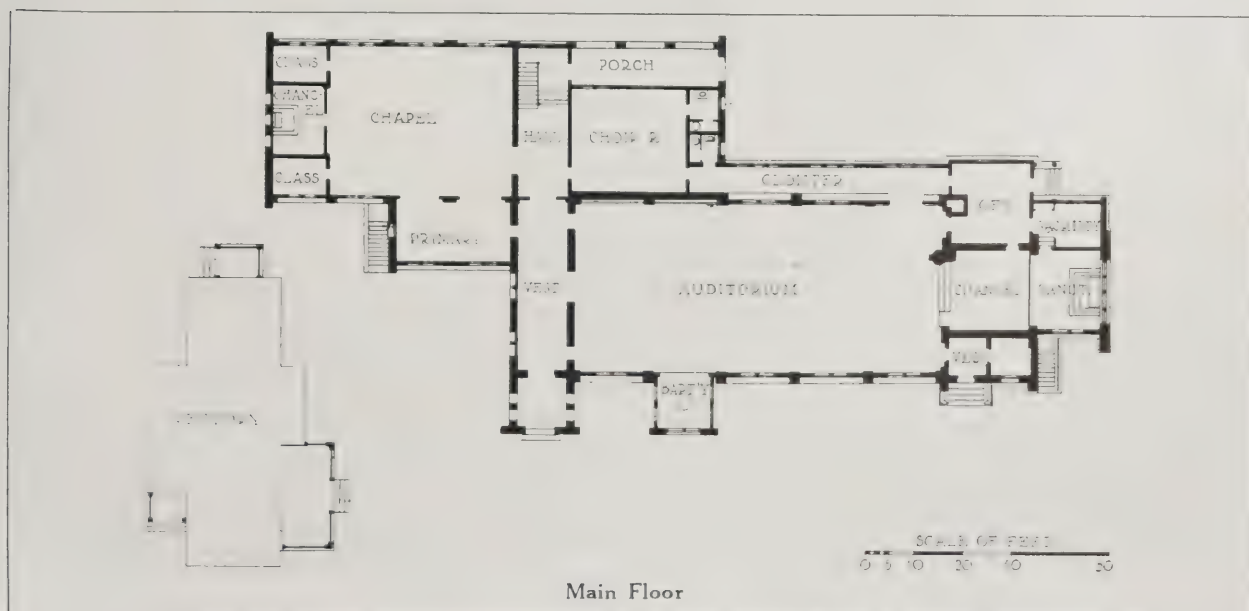
CHURCH OF THE HOLY SPIRIT, LAKE FOREST, ILL.

GRANGER & BOLLENBACHER, ARCHITECTS

IN this small church at Lake Forest a suggestion of the English parish church is found in the low square tower above the choir and the long, unbroken lines of the roof. Suggestive of the cruciform plan, small gable-roofed bays break the length of the church like short transepts at the point where the tower rises above the main roof. At one side, and parallel to the church, is a large parish house containing Sunday School rooms and an auditorium. This building, like the church itself, is constructed of rough-finished stone laid up random with irregular

joints. Half-timber and stucco have been introduced in the gable ends of the church and parish building, and also in the panels between the first- and second-story windows of the parish house. In design both of these buildings show a very free use of English parish church precedent. The effect of the whole composition is pleasing on account of its long, low lines.

The interior architecture of the church is less restful than the exterior, largely on account of the sharp contrast between the light plaster surfaces and the dark toned brick piers and dark stained roof timbers



FORUM SEPECIFICATION AND DATA SHEET—108

Church of the Holy Spirit, Lake Forest, Ill.; Granger & Bollenbacher, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Masonry walls, wood floor; roof construction, non-fireproof.

EXTERIOR MATERIALS:

Limestone.

ROOF:

Slate.

WINDOWS:

Wood casements.

FLOORS:

Wood, tile and slate.

HEATING:

Steam, oil burner.

PLUMBING:

Open fixtures.

ELECTRICAL EQUIPMENT:

Usual conduit wiring.

INTERIOR MILL WORK:

Oak.

INTERIOR WALL FINISH:

Sand-finished plaster.

DECORATIVE TREATMENT:

Stained woodwork.

SEATING CAPACITY:

About 350.

COST:

Parish House cost \$69,000.

DATE OF COMPLETION:

Parish house completed June 1, 1925.

and rafters. Even the brick arches of the east wall stand out conspicuously against the light toned plaster walls above them. The placing of the tower between the sanctuary and the nave of the church gives added depth and importance to the choir itself. This division is emphasized by the heavy rood beam

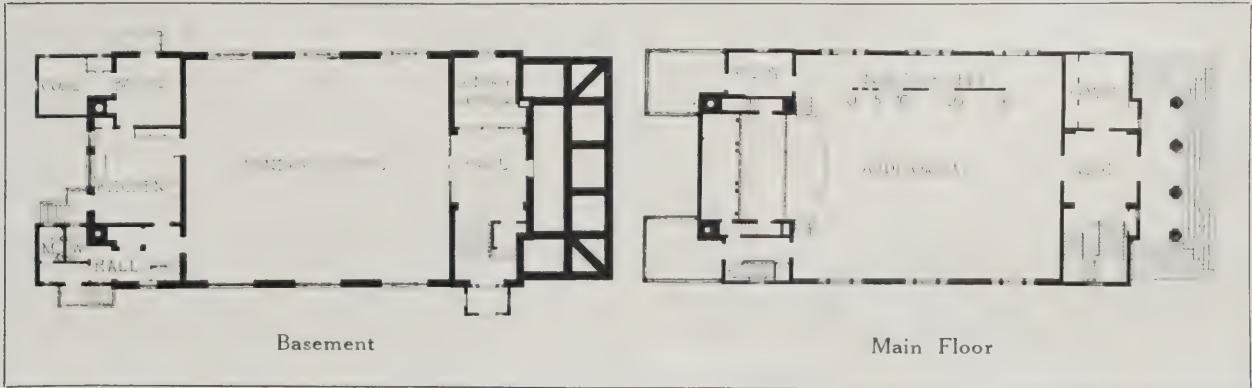
with its cross between the nave and choir. The general proportions of the interior as shown in the relations between the length, the width and the height of the nave, extending as it does up to the peak of the roof, with rafters and girders largely exposed to view, are successful and pleasing as well as appropriate.



Interior, Church of the Holy Spirit



ELLINGTON CONGREGATIONAL CHURCH, ELLINGTON, CONN.
CLARK & ARMS, ARCHITECTS



FORUM SPECIFICATION AND DATA SHEET—109

Ellington Congregational Church, Ellington, Conn., Clark & Arms, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Basement, brick and frame above, wood frame,
with steel construction in tower.

EXTERIOR MATERIALS:

Clapboards and matched siding.

ROOF:

Black slate.

WINDOWS:

Double-hung, wood.

FLOORS:

Maple.

HEATING:

Steam.

PLUMBING:

Toilets in basement.

ELECTRICAL EQUIPMENT:

Lighting, and blower for organ.

INTERIOR MILL WORK:

Pine.

INTERIOR WALL FINISH:

Plaster.

DECORATIVE TREATMENT:

Paint.

SEATING CAPACITY:

280.

APPROXIMATE CUBIC FOOTAGE:

192,157.

COST PER CUBIC FOOT:

17½ cents.

YEAR OF COMPLETION:

1916.

THIS white painted wooden church shows unusually careful study of Colonial proportions and details. So consistent is the entire design that the casual observer might easily believe that this church was built 150 instead of only ten years ago. The graceful entrance portico with its four Ionic columns standing on an imposing flight of eight broad steps, and backed by pilasters and a flat wall surface obtained in the old fashioned way by the use of close-matched siding, adds much to the old time appearance of the entrance front. The use of wooden quoins for the corners of the building, to give an

exterior indication of the interior divisions of the plan, is another pleasingly old fashioned treatment. Although there are a few such examples to be found in Colonial architecture, the use of the Palladian type of window for all of the large side windows of the church is a little unusual. White painted woodwork, old fashioned pews with mahogany rails, an interesting and pleasing treatment and location of the organ and choir gallery back of the minister's platform and reading desk, strike a harmonious note in reflecting the congregational and old fashioned New England character of this fine church interior.

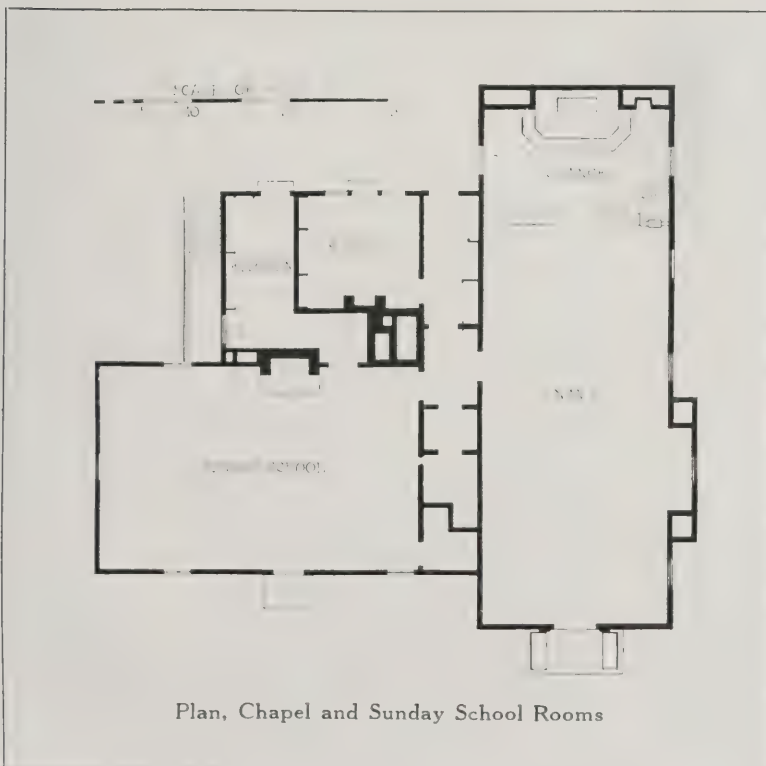


East End, Ellington Congregational Church



CHAPEL FOR ST. ALBAN'S PARISH, BEXLEY, COLUMBUS, O.

MILLER & REEVES, ARCHITECTS



IT is interesting to note that one has to travel all the way to Ohio to find one of the best small churches built within the last three years in a modified type of the Colonial style. Delicacy of detail, simplicity of design and excellence of composition give to this small ecclesiastical edifice real distinction. The main door, although ample in size for its purpose as the principal entrance to the small nave, is so well designed and proportioned that it does not overpower the little end elevation of this small church. The use of quoins for the several corners of the building, together with the delightful pedimented treatment of each of the gable ends, gives an architectural stability and dignity seldom found in wooden architecture, whether the building be large or small, old or new. The long, low wing containing the Sunday School rooms easily takes its subordinate position as a part of the whole composition, suggesting as it does the old fashioned New England school house. The little

FORUM SPECIFICATION AND DATA SHEET—110

Chapel for St. Alban's Parish, Bexley, Columbus, O., Miller & Reeves, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Non-fireproof; concrete foundation; frame superstructure.

EXTERIOR MATERIALS:

Shingles.

ROOF:

Gray shingles.

WINDOWS:

Double-hung, wood.

FLOORS:

Oak.

HEATING:

Warm air.

PLUMBING:

Usual installation and good fixtures.

ELECTRICAL EQUIPMENT:

Conduit.

INTERIOR MILL WORK:

Poplar, painted.

INTERIOR WALL FINISH:

Sand-finished plaster.

DECORATIVE TREATMENT:

Stained wood ceiling; plain plaster walls.

SEATING CAPACITY:

100.

APPROXIMATE CUBIC FOOTAGE:

62,000.

COST PER CUBIC FOOT:

Approximately 24 cents.

DATE OF COMPLETION:

June, 1925.

Note: This is a temporary structure for a new parish.

belfry and sharp spire create the final architectural notes needed to complete the "song of frozen music" to which Ruskin compared architecture long ago.

The interior design of this exquisite bit of architecture shows the same severity and simplicity as the exterior. White painted wooden benches capped with carefully detailed mouldings in mahogany harmonize with the soft gray of the plain plaster walls. The chancel rail of delicately turned balusters and the white paneled altar contrast agreeably with the monastic severity of the interior design. Relieving the gray and white of the furniture and walls, the ceiling rafters and beams are stained deep brown,

and the beams are decorated at intervals with heraldic devices in colors. The rafter directly over the chancel rail becomes a rood beam, through the placing upon it of a small cross of carved wood. At one side of the small church auditorium a passage between the seats leads to a door which connects with the Sunday School rooms in the wing of the building. Although simple to the point of austerity, the interior of this little church possesses an atmosphere truly religious. The pomp and glamor of the material world have been successfully eliminated. A spirit of rest and repose, of sanctity and silence pervades this building, the work of creative architectural ability.



Nave, St. Alban's Chapel



The Main Entrance



Photos. Walter Dole

EVANGELICAL CONGREGATIONAL CHURCH, BRIGHTON, MASS.

BLACKALL, CLAPP & WHITEMORE, ARCHITECTS

ANOTHER excellent example of a modern suburban church, the plan and details of which have been carefully copied from Colonial precedent, is this brick-veneered church with white painted wood trim at Brighton, Mass. The tall tower with its

solid rectangular base, penetrated by clock faces on four sides and its well proportioned and pleasingly detailed belfry above, sits solidly above the entrance portico of the church. This portico shows four fluted Tuscan columns standing on low, spreading

FORUM SPECIFICATION AND DATA SHEET—111

Evangelical Congregational Church, Brighton, Mass.; Blackall, Clapp & Whittemore,
Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Brick veneer on wood frame.

EXTERIOR MATERIALS:

Brick, stone and wood.

ROOF:

Slate.

WINDOWS:

Wood sash and frame; cathedral glass.

FLOORS:

Oak, and tile in lobby.

HEATING:

Vapor.

PLUMBING:

Enameled fixtures.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

Oak and white pine.

INTERIOR WALL FINISH:

Plaster, painted.

DECORATIVE TREATMENT:

Main auditorium, white and gray; social room, oak and tan plaster.

SEATING CAPACITY:

Main auditorium, 374; main balcony, 217; Sunday School room, 400.

APPROXIMATE SQUARE FOOTAGE:

8,584.

COST PER SQUARE FOOT:

\$12.80.

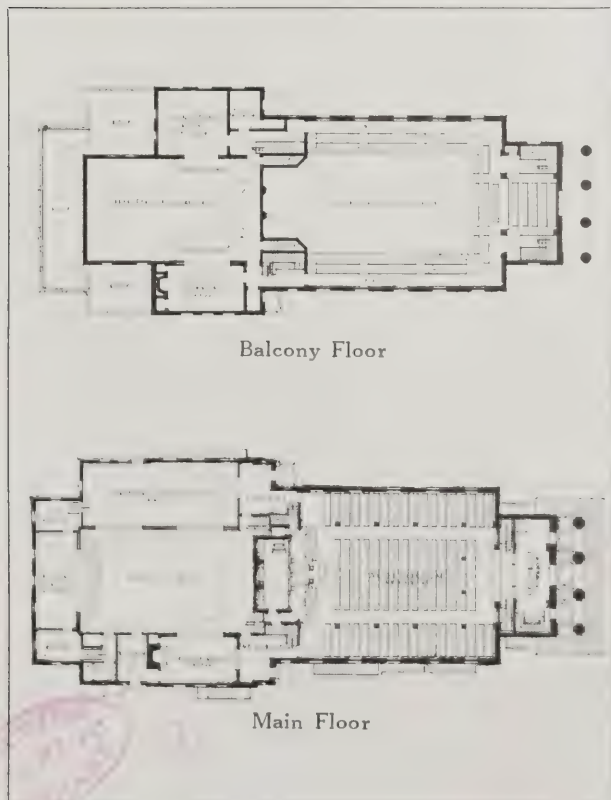
DATE OF COMPLETION:

June 26, 1922.

marble steps and supporting a heavy but simple entablature and pediment. As the columns and entablature are of wood, it would seem to have been more consistent had the face of the pediment itself been constructed of the same material instead of brick. In fact the use of some decorative Colonial details in the pediment would have tied together more happily the severe and stately entrance portico and the more decorative arched detail of the tower above. The white painted pews with mahogany rails; the plain, stout columns supporting the balconies; the pulpit-like reading desk in the center of

the chancel; and the high singing gallery and ornamental treatment of the organ at the rear of the chancel all add dignity and a consistent Colonial character to the church auditorium.

The floor plans show the excellent provision which the architects have made for what might be called the "working departments" of the parish. Nothing in a church of this size could be more complete than the rooms for the Sunday School,—a main hall together with smaller classrooms opening from it, and with the necessary retiring rooms. These are reached either from the main auditorium or directly from outside.



Interior, Brighton Congregational Church

INTERIOR ARCHITECTURE

The Boudoir of Madame Du Barry, Versailles

By C. HAMILTON PRESTON

OF all the rooms composing that famous suite at Versailles known as the *Appartements Du Barry*, created by Louis XV for the royal favorite, the subject of our sketch is the most interesting; as to both design and detail it is unusual.

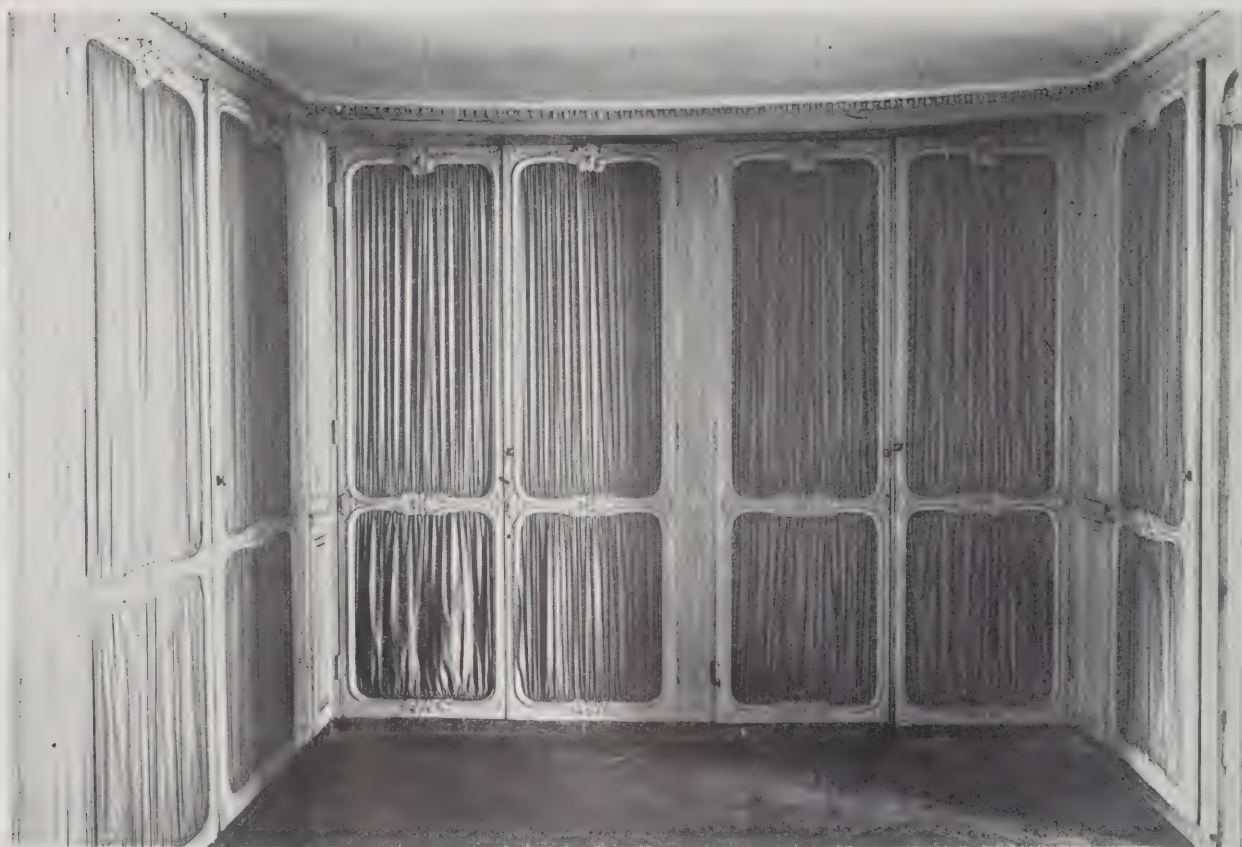
Apparently the room was planned as a combination boudoir and dressing room. The customary alcove for the bed is there, though not so deeply recessed as usual, while all around are the closets arranged to include practically all the paneling of the room. This room, facing on the town side of the Palace, is lighted by a single dormer which, though one of those beautifully designed and detailed dormers of which there are so many at Versailles, is nevertheless none too large and gives so little light that the room is rather gloomy. The problem of getting the requisite height for the room was managed by placing the ceiling high in the roof and stepping down twice to the height of the dormer. This treatment is most ingenious in spite of the fact that the dormer seems low in appearance and tunnel-like in effect, owing to the length of the jambs. It is the best solution of a difficult problem, and the effect is greatly enhanced by the beauty of the detail involved.

In detail of the Louis XV manner, this room is

unsurpassed. The graceful curve and center motif of the alcove; the top, bottom and intermediate motifs of each of the panels which form the closets; the narrow panels wherever they occur; and the curved panels at either side of the alcove are all exquisite in the grace and beauty of their curves and the rare delicacy of their detail. Nowhere in France is there a more satisfactory piece of work of this period. The mouldings are varied as to design and scale, yet properly related one to another, robust in scale, and never finical. In this room we find expressed the best traditions of the Louis XV manner strength throughout and utmost beauty of detail. The mantel is elaborate in design and unusual in ornament, though the design is somewhat marred and confused by the extraordinarily mixed mottlings and markings of the marble, a strange mingling of dark yellows and reds. In the time of Du Barry this room must have been charming in color; now it is the usual gray, as modified by the Second Empire. As an inspiration for either a boudoir or library in a slightly frivolous and gaysome manner, this room is without peer. The arrangement of the paneling is well adapted to use in a library where it is necessary to place the books in glazed cases.



Mantel, Boudoir of Madame Du Barry

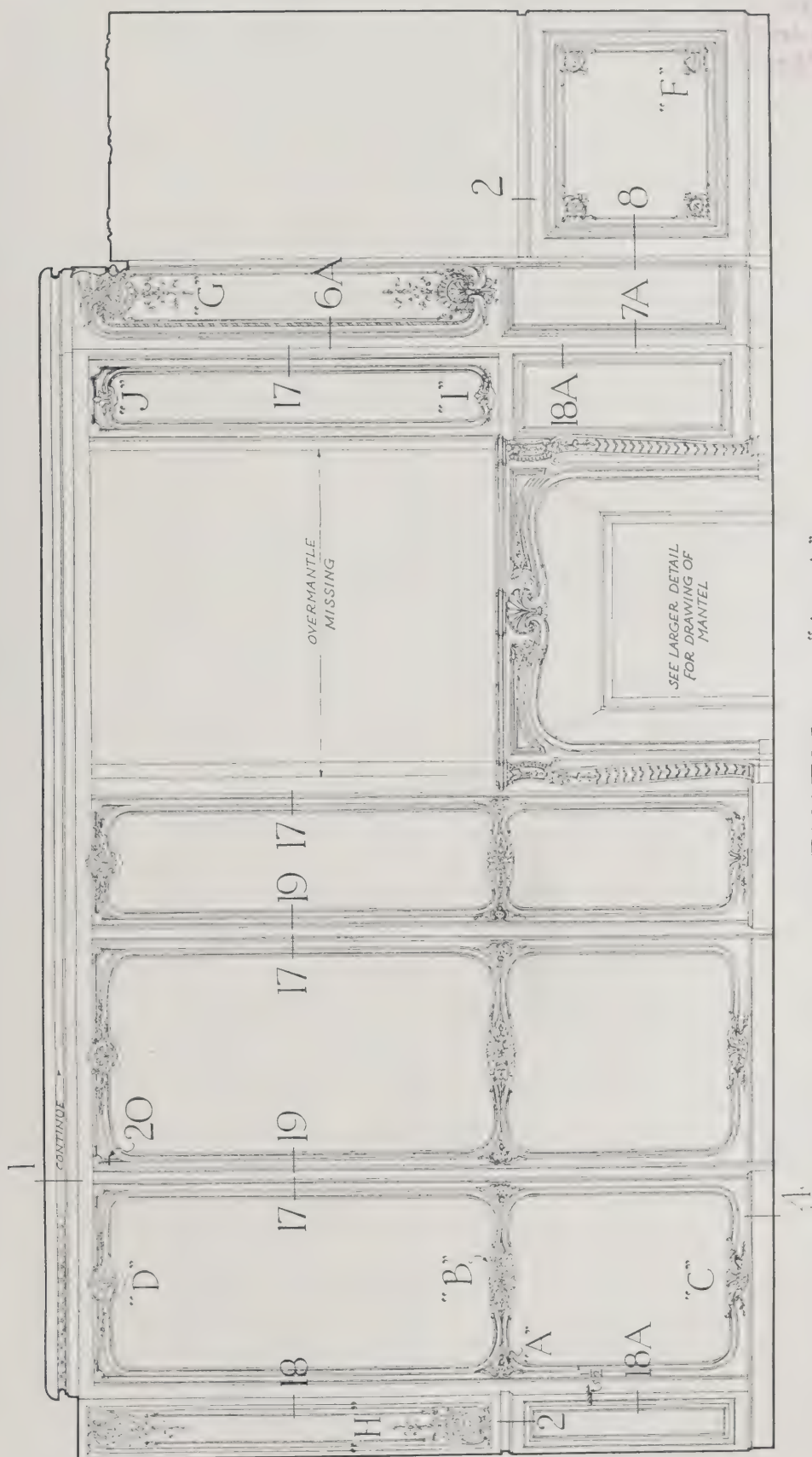


PANELING



ALCOVE

DETAILS, BOUDOIR OF MADAME DU BARRY, VERSAILLES



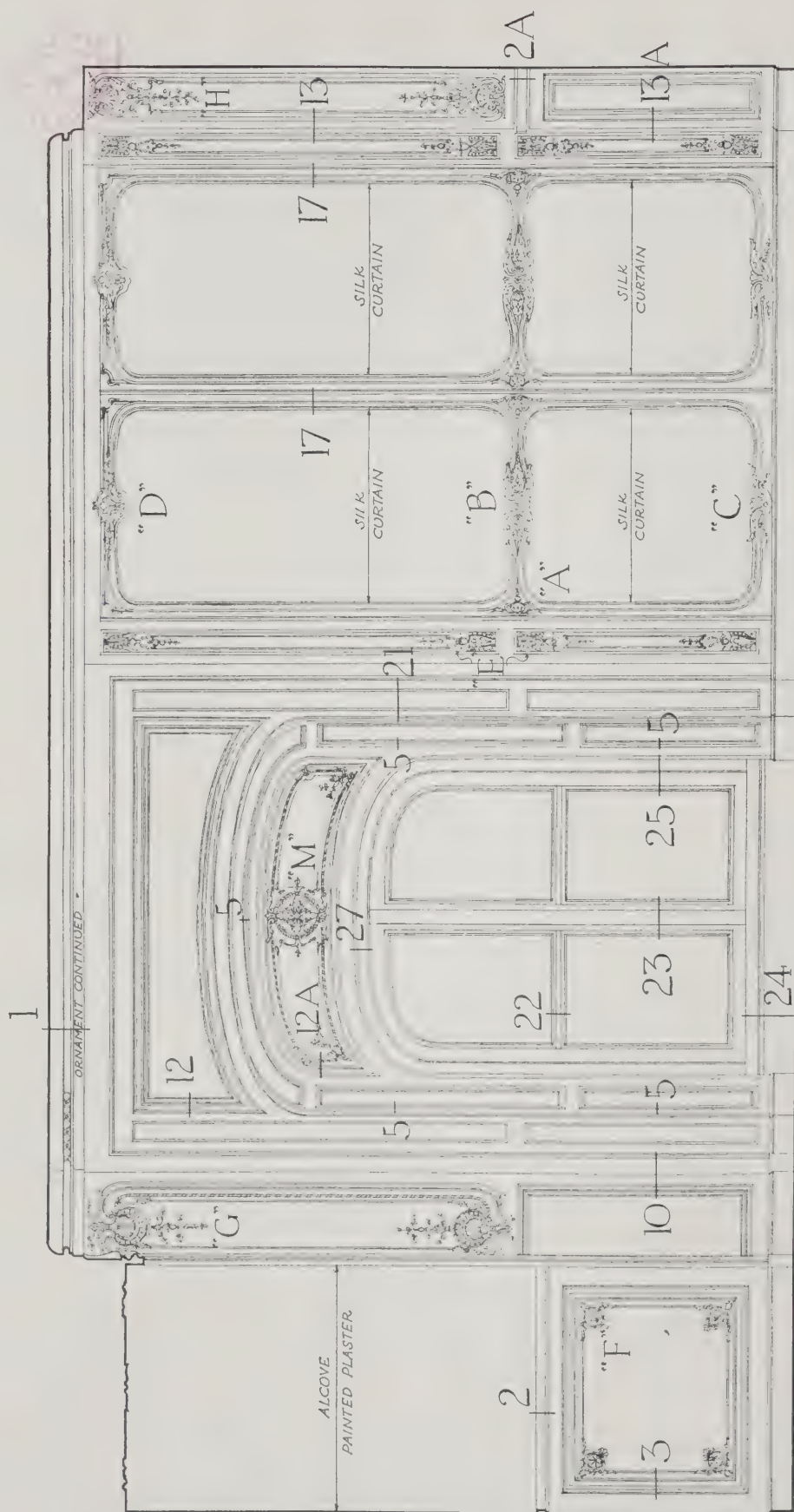
ELEVATION "A~A"

Scale $\frac{1}{2}$ " = 1 Foot

BOUDOIR

DU BARRY APARTMENTS

VERSAILLES



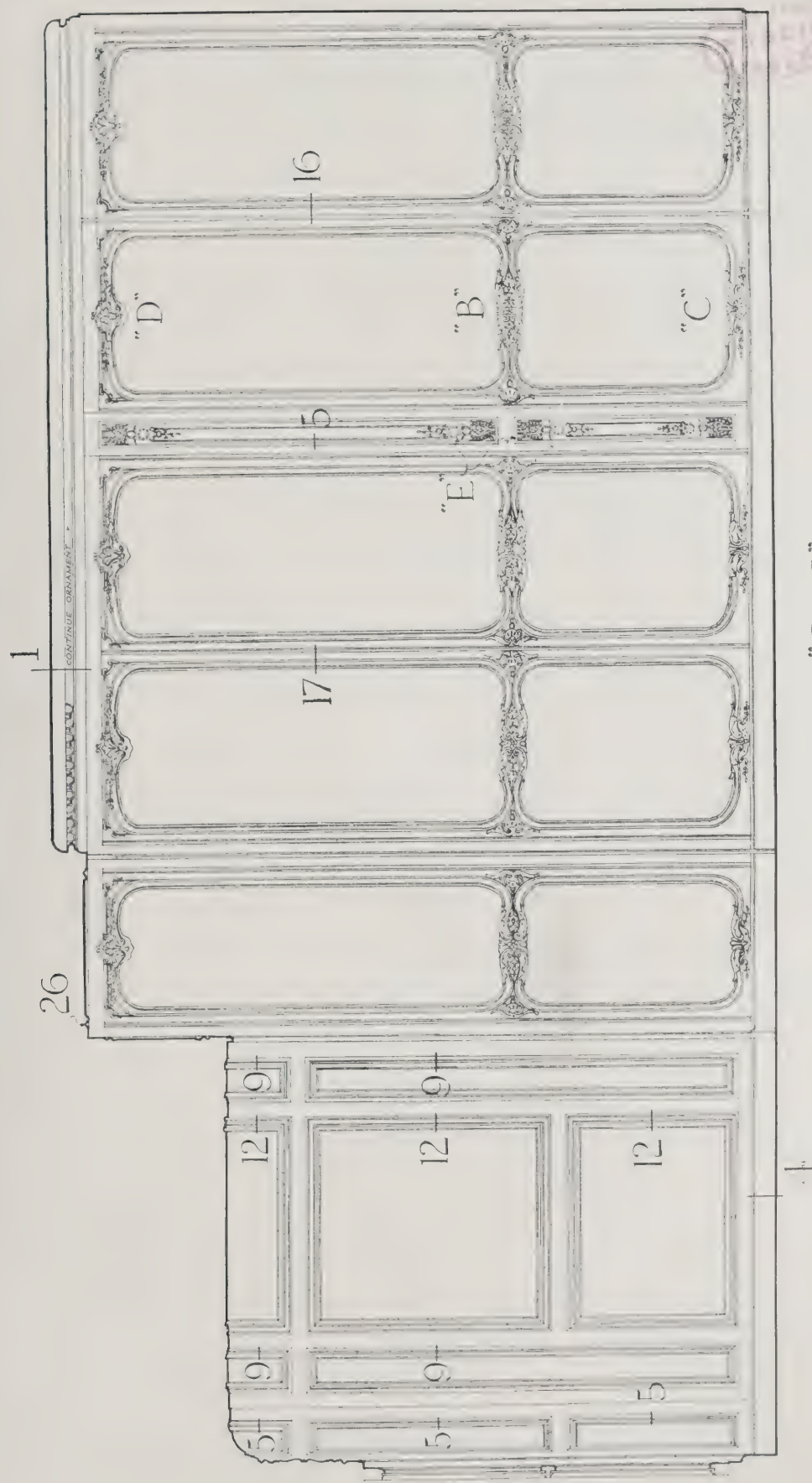
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BOUDOIR

DU BARRY APARTMENTS

VERSAILLES



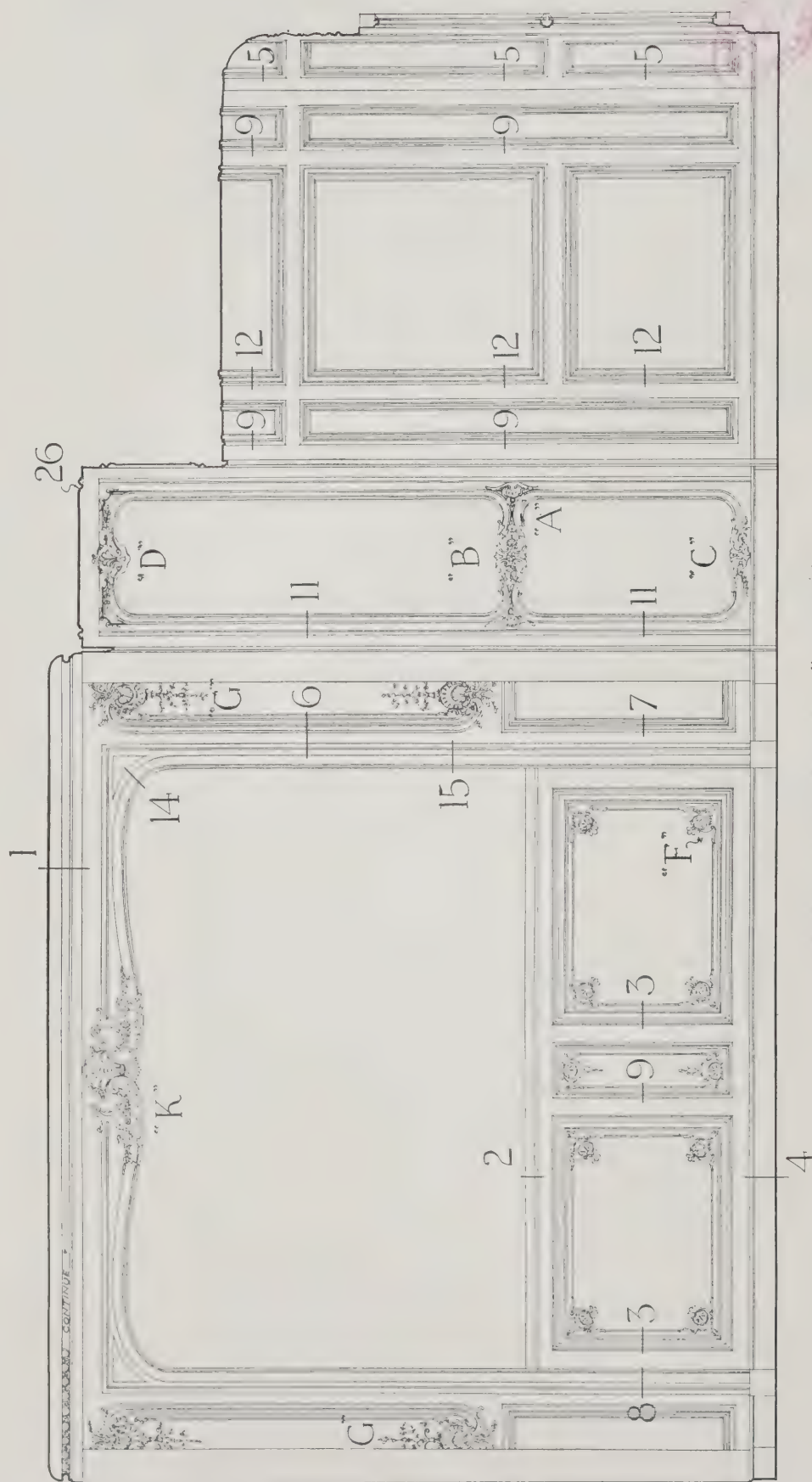
ELEVATION "C~C"

Scale $\frac{1}{2}$ " = 1 Foot

BOUDOIR

DU BARRY APARTMENTS

VERSAILLES



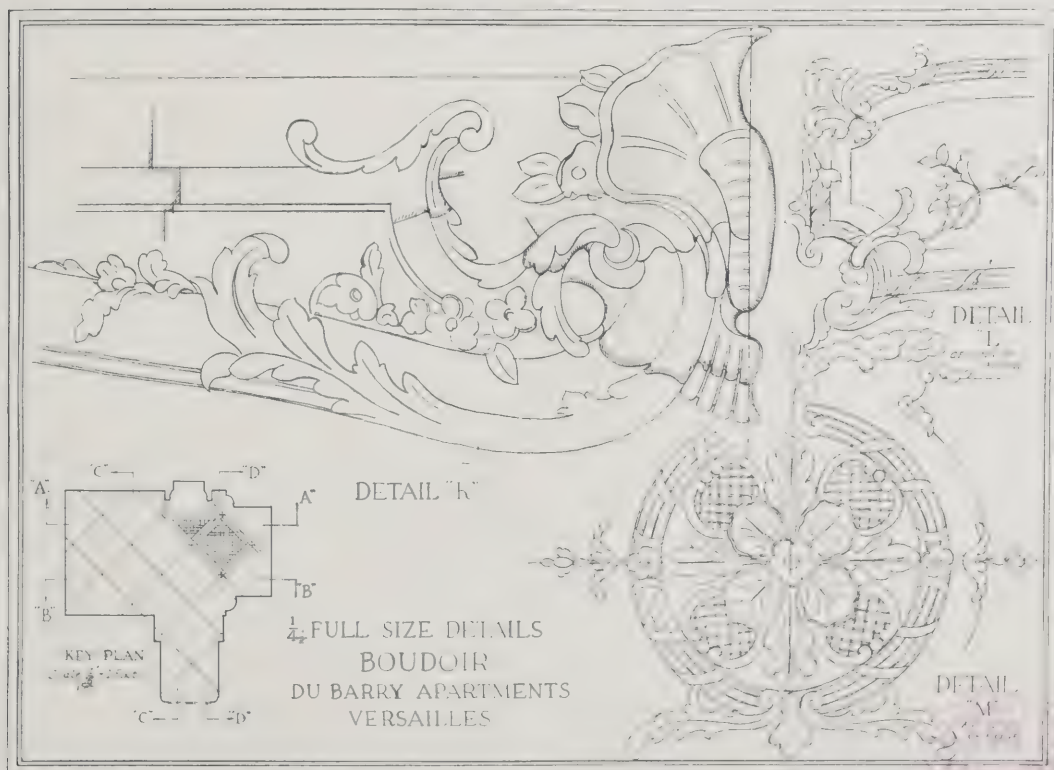
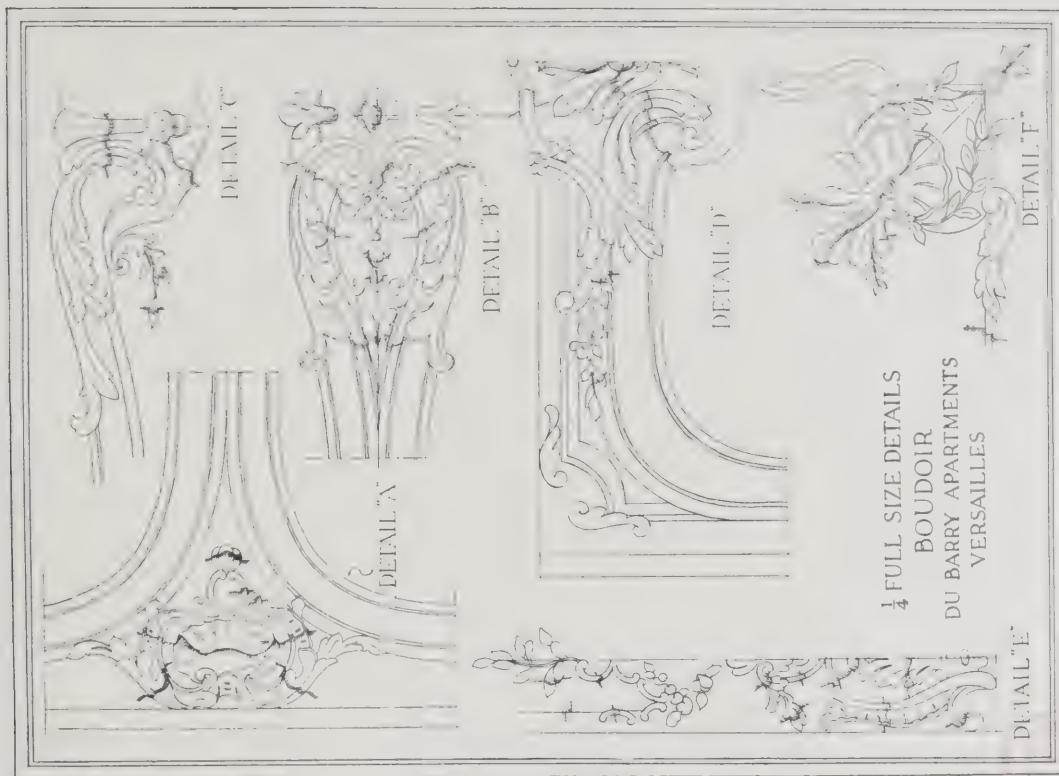
ELEVATION "D~D"

Scale $\frac{1}{2}$ " = 1 Foot

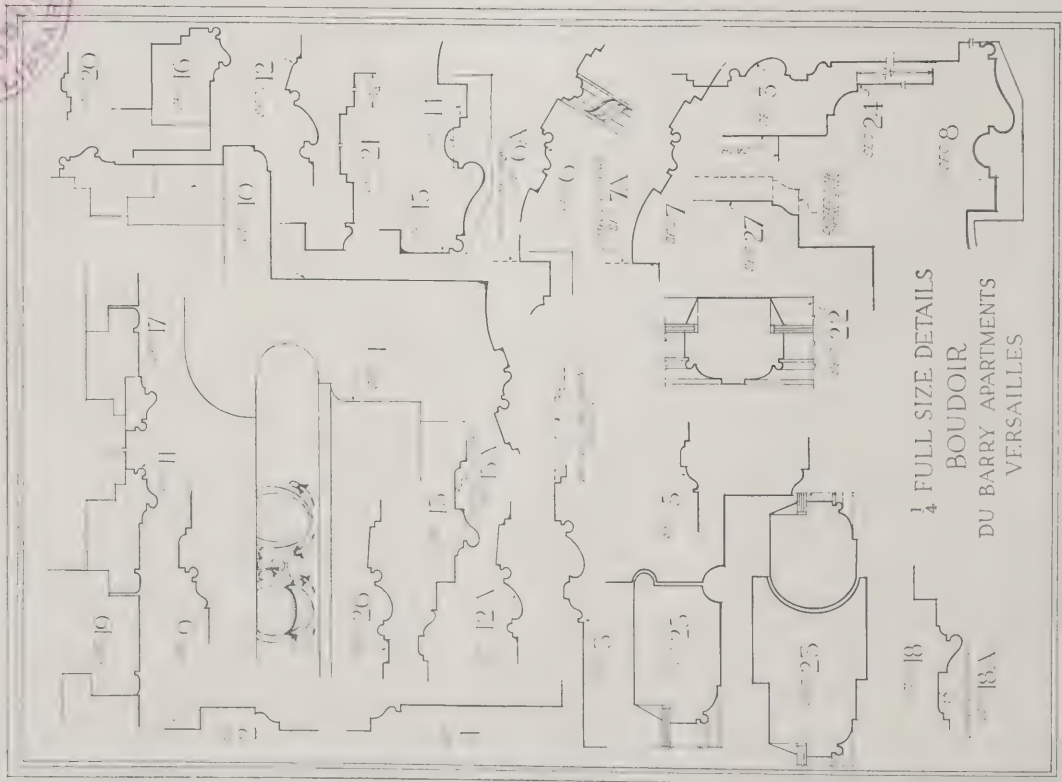
BOUDOIR

DU BARRY APARTMENTS

VERSAILLES



BOSTON
PUBLIC
LIBRARY



1/4 FULL SIZE DETAILS
BOUDOIR
DU BARRY APARTMENTS
VERSAILLES

BOSTON
PUBLIC
LIBRARY



1/4 FULL SIZE DETAILS
BOUDOIR
DU BARRY APARTMENTS
VERSAILLES

THE ARCHITECTURAL FORUM



JUNE
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JOHN RUSSELL POPE, ARCHITECT

From a Pencil Drawing by Otto R. Eggers

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The ARCHITECTURAL FORUM

Volume XLIV

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Number 6

The Inspirational Value of Collegiate Architecture

By C. HOWARD WALKER

THE influence of propinquity is constant throughout man's life. His environment unconsciously moulds his attitude of mind and his methods of living and often determines his choice of action. It is all the more beneficial or pernicious because he is not conscious of its power until its results are borne in upon him by confirmed habit. In all of his senses he is either dulled or excited by it. The love of the plains man for vast horizons makes crowded communities irksome to him. The mountaineer desires heights and contrasts of contour, and complains that in the prairie there is "nothing to lift the eyes to." The sailor longs for the sea and its never-ceasing changes,—the tang of the salt in his nostrils, the wind singing in the shrouds.

Life is made up of sensations, in which satisfaction is often an acquired taste. Both vices and virtues are stimulated by these sensations. Squalor, disorder, evident conflict and sensational monstrosity induce the one; serenity, cleanliness, order, and restraint and beauty, the other. Of the child or man who has lived in the midst of mediocrity, it is unfair to expect any other quality. It is therefore of fundamental importance to provide fine environment to create a taste for fine achievement. This is true in all the efforts of man's mind, whether religious, ethical, philosophical, artistic, scientific, commercial or industrial. It is axiomatic and requires no argument. It is equally evident that the effect of environment becomes active when the child becomes conscious, and that its character is formed by the example of its ancestors. Upon them rests the responsibility for the happiness and the qualities of their descendants. Physical eugenics are preventive, corrective and at times provocative, clearing the way for a proper exercise of the emotions, but not guiding them, while the object lessons of environment directly attract or repel or dull sensitiveness of the mind.

Things soon make the first appeal to the mind of a child, color first, form later. Primitive colors are enjoyed before subtler combinations. Then reminiscence occurs, i.e. the fact that the object resembles one seen before. Contrasts are felt when harmonies are unknown. The child is a constant alternation of storm and sunshine. As years advance and the hori-

zon broadens, these characteristics continue unchanged excepting from observation of example, and of the failure of childish action or appreciation. What was confined to the eye, now is apparent with the ear. Noise and concussion versus melody,—and then to the reason,—obsessions versus deduction from observation, and later speculation and hypothesis. All educators recognize this simple process.

But coincident with it is the growth of imagination, of romance, a dreamland which is reminiscence woven into the thing wished for, the life desired, and out of which grows grêat achievement. How fine, therefore, should this reminiscence be made! It springs from story, from legend, from elfin music, from the great arts of the past, and from the laws of the universe, and the inspirations of religions. These are to be had in the open, and the sky, the field, the outdoor zest are theirs; but even with them this freedom does not last long into later life. The Greek ideal was of a man well rounded in all his possibilities, and Sophocles won in the pentathlon, in music and song and in drama. And there are many others, studious boys who like to be in pleasant surroundings, poring over their books and loving them, partly because of these surroundings. There has been the eminent "art of making enemies" attributed to them. Standardization, that implacable, infallible result of tabulation of facts has descended upon them. Sanitation has loomed large beside them; automatic ventilation has deprived them of a breeze! Schoolhouses and colleges have become and have resembled institutional factories. (Incidentally, even factories can be made attractive.) It is problematic how often a pupil remembers with affection the years spent in these schools and colleges. Certain information and training may be of great value to him, but how much did he really love the old buildings of his Alma Mater, and what did his environment do for him? This is of course not entirely a new condition. No more dismal a group of buildings exists than those of the University of Edinburgh, and while its alumni are proud of the attainments of its long list of eminent men, they have many times deplored its depressing effect upon them. Many of the *ecoles* in France are today at least rather negative.

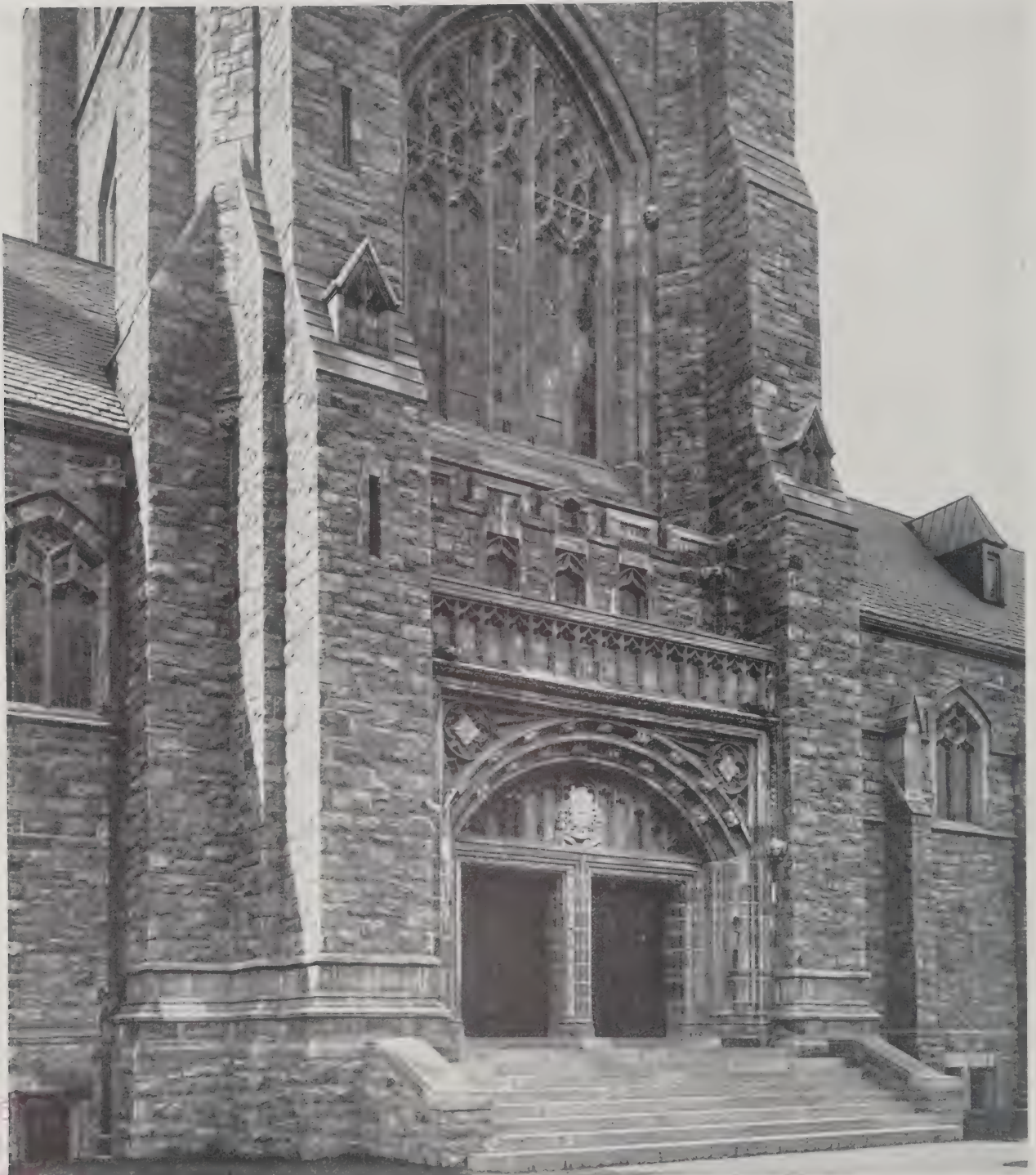


Photo. Drix Duryea

Entrance Detail, Memorial Building, Lehigh University, Lehigh, Pa.

Visscher & Burley, Architects

It is to England that we must turn to find the schools that are loved, and the list of them is long. Everywhere in literature they appear,—the quads and colleges of Oxford;—Magdalen, Merton and the delectable court and yew trees of Wadham; Addison's walk, the gates and towers and chapels,—the nooks and corners in which to curl up and enjoy the very walls and stones about one,—the tablets and symbolic devices, the very chimneys against the sky with the rooks wheeling about them become the

backgrounds of history and romance! They are like the closes of the cathedrals, as described in "Edwin Drood" and "David Copperfield." Thackeray loved them, and a long list of English writers pay homage to them;—Tennyson, Swinburne, Ruskin, Scott, Galsworthy, Hardy, Barrie, Kipling. To have lived several years in them is to have academic memories which are only paralleled by the love for fellow classmen,—who pass, while the colleges live on.

And the pride of having been one with the army



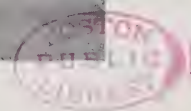
Photo. Thomas Ellison

Detail of Loggia, Law School, University of Michigan, Ann Arbor

York & Sawyer, Architects

of the past who have done honor to these worthy walls is ever present! Who can go into the great hall at Padua, the walls of which are blazoned from dado to ceiling with the coats of arms of its scholars, among which is that of Galileo, who knew "the world moved," without a feeling of awe for that noble array of distinguished men who have been in that hall and have loved it? It is no little thing for a student to feel an intimate sympathy with the place in which he studies. Who that has ever been at

Cambridge in England but remembers the small and intimate quads, each with its own individuality, not too large to be felt one's own, and recalls his walks across the tiny but charming bridges of the Broads? Would "Tom Brown at Rugby" or "at Oxford" have felt the same warmth in his heart for an "Educational Institution," however well ventilated and sanitized? There have been competitions in which the plans premiated have been chosen for the knowledge shown of the disposition of air ducts! Is Eton



more deadly from her less knowledge of ventilation?

Fortunately, very fortunately, the United States has in the East an English tradition and in the West a Spanish tradition. England has had for centuries universities which are good to look upon and good to live in. Spain has had for centuries the power to build with simple masses, enriched by focused decorative detail in which precedent has led to some excellent motifs for educational buildings. The universities in England were fostered and built by Henry VIII in what is known as the Tudor style. It is a free style and simple, but with many opportunities for picturesque effect, of which the English have always been extremely fond, even in their Renaissance work. Its windows can be accommodated to the sizes and purposes of the rooms and can be single or grouped, and it is capable of assimilating to itself Classic motifs. It possesses far more than bald utilitarian requirements, inasmuch as its chimneys are more agreeable to look at than they need to be, and it is benefited by gables, which can be made unnecessary, but as all beauty for itself alone, even to the shaping of a vase, is unnecessary to the mind that never thinks in the terms of beauty, it might be as well to build some of these chimneys and gables as object lessons to that mind for it to decide whether anything more than bald utility is desirable in its estimation.

Fortunately, a number of the American colleges have found good in the English tradition, and apparently are justifying the selection of the type. Some years ago Cope & Stewardson built a portion of the University of Pennsylvania in this manner, with an entrance portal which dignified the group as the great gateways in England have done. Washington University in St. Louis was built about a great quad, with a touch of Renaissance in some of its motifs. Bryn Mawr followed, as did Princeton with its fine graduate school and Cleveland Memorial Tower by Cram, and the Harkness Memorial by James Gamble Rogers at Yale, made especially picturesque, and other buildings in this style are contemplated or under construction. Elsewhere throughout the country smaller groups have followed this lead, such as that at Grinnell in Iowa. In the West, at Boulder, Mr. Klauder, who in the East has designed admirably in the Tudor type, successfully adopted a simple rugged picturesque Spanish style.

Of the Classic type, the buildings of the University of California by John Galen Howard at Berkeley are the largest in extent. These are so picturesque, well grouped upon a hillside, in the midst of fine trees, that all dry formality is avoided, and their general effect is charming. The campanile is especially fine in its grace and proportions. The University of Virginia, begun by Jefferson, has been most sympathetically added to by McKim, Mead & White. The buildings, all of one story and united by a continuous colonnade on either side of a great terraced rectangle, at the end of which is the domed library building originally designed by Jefferson,

give an effect of great dignity and harmony. Leland Stanford University at Palo Alto by Shepley, Rutan & Coolidge followed the tradition of Richardson and is Romanesque in style; but has cloistered courts which give a very attractive effect to the buildings.

Speaking of cloistered courts recalls a Memorial Cloister at Winchester in memory of the 600 boys of the school who were killed in the Great War, erected by the alumni of the school, which is the largest and most renowned preparatory school in England. The cloister is of limestone built around an open grassed court about 180 feet square in which is a memorial cross. The arcade of the cloister has double columns one behind the other in the manner of St. Stefano at Bologna. On the cloister wall behind each arch are placed alternately tablets with the names of the boys and the coats of arms of the allied nations carved and colored heraldically in red, blue and gold. The ceiling is of dark oak beams decorated in color. At the top of the cloister wall is a mosaic frieze, an inscription in white on a black flint ground. The roof is of stone slabs laid like slate. The beauty of the proportions, the care and delicacy of the detail are masterly. It is the work of Herbert Baker, originally from Cape Colony, and is an example of the best type of war memorial. The sentiment with which it is done, and the affectionate care devoted to it must affect every Winchester boy.

There are undoubtedly many other examples which indicate the appreciation of the architects of modern colleges of the need of beauty in academic buildings and their surroundings. In many cases, as at Harvard, unity of impression has been gained by walls and gates, but there is still a persistent desire upon the part of donors of college buildings to have each of their gifts individual in character. The result is heterogeneous, the effect that of a harlequinade. It is true that both at Oxford and Cambridge, change of period has occasioned change of style, but by some fortunate circumstance, perhaps fortuitous, a uniform scale has been kept, and changes of style were never excessive in contrast.

It is well worth consideration whether it would not be advisable to adopt for a college or university a general type for the buildings, and to frame some restrictions, at least of censorship, that would influence all buildings in the future, causing them to conform to a specified general type. This would at least ensure harmony throughout the college. Such a harmony existed in towns abroad when transportation was difficult and when there was only one method of erecting buildings in each locality. What followed was a natural result which is unobtainable today, as there are no limitations as to space, materials or methods. The only means by which harmony can now be obtained is by foreseeing disorder and forestalling it by some wise restrictive act of the corporation. Such action, while apparently autocratic, would go far to restrain varied individuality in buildings, which, while erected for different specific purposes, should have a common generic unity.

The Design of Memorial Buildings

By RALPH C. HENRY

Of the Firm of Guy Lowell

THE term, "Memorial Building," used in its broader sense, quite obviously embraces the many and various shrines peculiarly consecrated to popular heroes, saints or other sacred personages, kept free, in their design, from all considerations of public utility and making their chief appeal, as architectural monuments, to the quiet and more purely contemplative mood through sheer beauty and appropriateness of form and material and embellishment. It also includes the many structures, of great diversity in useful function, where the impelling motive has originated in a desire for the perpetuation of some fond memory, but where the stimulus to consummation has been found in the fulfilling of some urgent civic or community need.

The surviving memorials of antiquity have been conspicuously of the former group, hallowed and consecrated by their history or past associations. It is fortunate that such has been the case, since in it lies a clear warning that memorials should be erected only after the utmost deliberation as to their design, in order that they shall be, first of all, beautiful; that they shall likewise be appropriate; of worthy materials; of integrity in workmanship, and permanent in so far as all these, in combination, give the maximum promise of permanency. Without, for the moment, raising the much mooted question of taste as to whether the purely commemorative shrine or the structure of public utility constitutes the better and more appropriate memorial, nothing, surely, is more deplorable, or revolting to the æsthetic sense, than the permanent infliction of ill-considered memorials upon a community, and I believe there is evidence in the architectural scholarship behind the noteworthy recent achievements in memorial structures that the lessons, in this country, of the monstrous creations erected during the years immediately following our Civil War have not been lost upon us. It is cause for felicitation, therefore, that wise counsel has, in the main, prevailed over the ardor of the first years following the armistice of 1918 to restrict the number of unwise and immature schemes for both architectural and sculptural memorials.

Let us assume that it is in the analysis of the arrangement or planning of memorials where their functioning as useful adjuncts to the architectural plant of a community is part and parcel of their conception, that we are, for the moment, most interested. And, even here, lest the analysis become too involved, we must deliberately exclude many desirable building possibilities and confine our attention to the consideration of the programs of a few examples which, by reason of their predominance as types, may be regarded as an indication of a discriminating popular preference. In my opinion, the choice of the style of architectural clothing of these typical memorials must always be left to the good taste of the architect,

unless, indeed, he find a well established local tradition, which has been thoroughly worthy, to which he may contribute another element in perpetuation of it.

By way of enumeration, these predominating building types include the Community Building; the Memorial Hall or analogous structure in which the auditorium is usually the heart or nucleus; the Memorial School; the Memorial Tower and the Memorial Chapel. There are excellent examples of each.

IN the Community Building, which usually, though not necessarily, creates a mind picture of the social activities of the smaller city or town, we should normally expect the program of arrangement to be something upon this order. There would, of course, be a large room or hall for assemblies, probably with a flat oak floor and movable seating, the seats arranged for ready removal, but for such joining in series as to prevent chaos in case of panic. Where the seats are to be temporarily stored there must be convenient space for such storage either in little-used adjoining rooms, in space beneath the stage, or in basement compartments served by trap doors. The floor, being flat for other than audience uses (and these uses are legion), it is imperative that the stage should be high, usually not less than from 3 feet, 6 inches to 4 feet above the main floor, to insure a reasonable sight line clearance for those in the middle and rear of the hall. The stage should have ante-rooms on each side and separate access to toilets, if possible; and adjoining one of these ante-rooms one would expect to find the kitchen and serving room with their appointments and entrances.

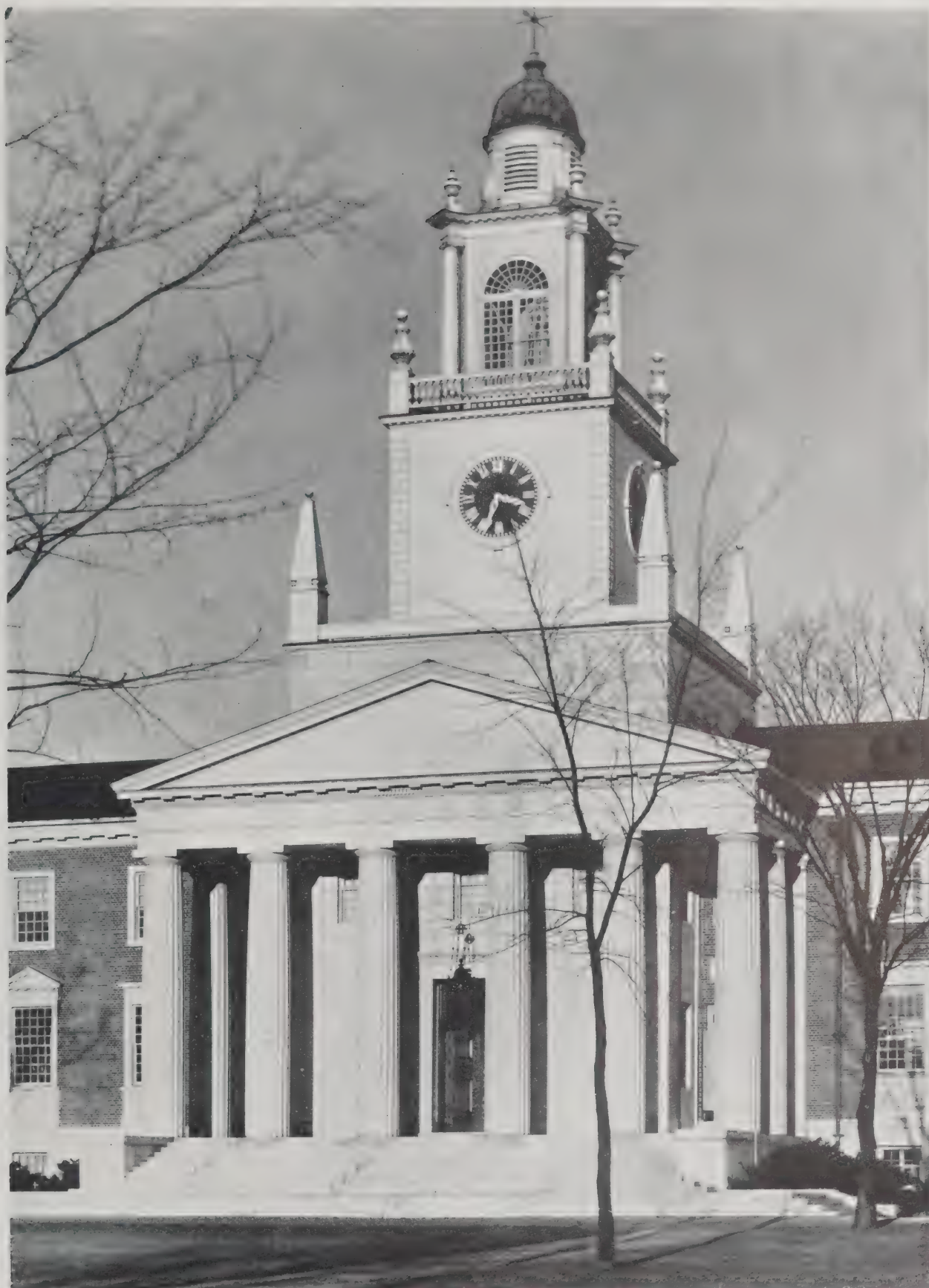
Between one side or end of the hall and out of doors should be a lobby or covered loggia into which doors, of sufficient aggregate width to provide ready and quick exit of the entire audience, should directly open. At the rear of the hall the social parlors would often be placed and separated from the hall preferably by folding partitions so that the floor space may, on occasion, be readily enlarged. Connected with these parlors one would find the custodian's office or apartment and possibly a reading room or small library, which is often necessary or desirable.

Over these rooms would be other similar rooms served by a staircase and lending themselves admirably to the various daytime activities of women's organizations. Here would meet the star chamber and the parlor caucus for the inception of all projects for the social uplift. From these rooms would open a small hall or gallery with its projection booth for motion pictures. The basement would contain a bowling alley or alleys; a high-studded room under the hall for a community gymnasium, with its toilet, lockers, and bath appointments, and under the stage



Photo. Tebbs & Knell, Inc.

DETAIL OF AUDITORIUM, THEOLOGICAL BUILDING, EMORY UNIVERSITY, ATLANTA
HENRY HORNBOSTLE, ARCHITECT



Photo, Arthur Cushman Haskell

ENTRANCE AND TOWER, SAMUEL PHILLIPS HALL, PHILLIPS ACADEMY, ANDOVER, MASS.

GUY LOWELL, ARCHITECT

or kitchen we would find a billiard and pool room and a smoking room, or two, as the case may be. The basement at the opposite end of the building is obviously the proper location of the heating and power plant with its necessary adjuncts of all sorts.

This, in essentials, is the program of the Community Building, susceptible, of course, of modification or enlargement as each particular problem demands. Such a building can be made compact and inexpensive, and it can, and does in many instances, satisfy an urgent need in the community as the focus of its social activity, of its recreation and its entertainment. It is deservedly the most popular of useful memorials.

AS in the Community Building, the dominating central element of the Memorial Hall problem is usually the auditorium. Let us consider in a little greater detail the elements indispensable to successful auditorium design in any type of structure.

The auditorium, as the obvious Latin derivation of the word indicates, whether it be of a church, a theater, a school, a public hall or a court of justice, is the space allotted to and set apart for the *hearers*. It may be said to have properly fulfilled its useful function if the audience may clearly *hear*, but it is quite as essential that the audience may also clearly *see*. Herein lies the crux of the whole matter of auditorium design. Architectural beauty of form or color or details can never redeem any audience hall deficient in these two absolute fundamentals.

The auditorium unit may, for convenience, be considered as divided into three major elements: the approaches, the auditorium proper, and the stage. The approaches should be direct and generous; often they may quite properly be imposing and monumental. The first element is the lobby, where the audience enters from the street. It should invariably be within a few steps of the street level. If the



Photo. Arthur Cushman Haskell

Samuel Phillips Hall, Phillips Academy, Andover, Mass.

Guy Lowell, Architect

building is upon a corner there will presumably be two such lobbies, each with its ticket office and bulletin boards. Communicating directly with the lobbies are the corridors or the foyers, each of which leads directly into the auditorium, and for purposes of easy circulation they should be broad, proportionate to the auditorium and connected with each other. Off the corridors and foyers are balcony staircases, the coat rooms, women's parlors and smoking rooms.

The auditorium itself may take in plan almost any form from the rectangle of varying proportions—which in its varieties is the prevailing shape—to the horseshoe, semi-circle or complete ellipse. More auditoriums are too deep than too wide, and the circle, or square with clipped angles, approaches the ideal in monumental halls. This has often been proved.

The classic auditorium or theater of antiquity was open to the sky, admirable indeed for the spectacle, but obviously inferior for hearing to the type as we

know it. But the introduction of the roof, to catch and reflect the upward part of the hemisphere of sound, brought with it certain problems. For decades, and, as a matter of fact until a comparatively recent date, satisfactory acoustics in auditoriums were very much a matter of luck. It is now no longer a gamble, and the architect is free to indulge almost any whim of design. Precise methods are open to all architects for preventing echo, for reducing reverberation, and for calculating the period of time in which the sound is said to "decay." There is now no possible excuse for failure to produce acoustic excellence. Materials reducing the wall and ceiling acoustical rigidity are available in many forms, tested by experience for their reliability. Among these the best are wood, textiles, hair felt, cork, muslin and asbestos products. The less good than these are plaster, natural stone, brick, glass, dense tile and concrete.

A word of caution should be urged upon those



Photo. Tebbs & Knell, Inc.

Theological Building, Emory University, Atlanta
Henry Hornbostle, Architect



Auditorium, Bridges Hall of Music, Pomona College,
Claremont, Calif.

Myron Hunt, Architect

who would make the room too spongy and soft, through excess of acoustical correction. A hall without resonance is as bad as one full of annoying echoes, particularly a hall for music, where resonance is vital both to the artist and the pleasure of his hearers.

In order to secure uninterrupted lines of vision, all auditoriums seating more than 400 people should have sloped or stepped seating and warped side balconies, securing the precise sloping or stepping being a comparatively simple problem, solvable graphically by graduation of the stepping to secure 5- to 6-inch sight line clearances from each seat to the stage focus. Aisles should, of course, be free from steps on the main floor (they are unavoidable in galleries), but the seats are more comfortable on level stepping than on slopes, however gradual they may be made.

The selection of the auditorium chair, both as to size and design, is usually influenced by the cost. Its arrangement upon the floor is generally determined by law, certain considerations of aisle widths and similar restrictions applying to their arrangement being imperative. The remainders of floor space, after deducting aisles, cross aisles and front and rear spaces, form the seat "banks." Within these spaces the chairs may be distributed on the basis of 30 inches back to back, where the comfort of occupants is not essential, and as low as 18 inches center to center of arms laterally, unless, as in many communities, these dimensions are also regulated by law. A back-to-back dimension of 32 to 33 inches and a lat-



Photo. Tebbs & Knell, Inc.

Auditorium, Neeley Memorial Building, Vanderbilt University, Nashville

Henry C. Hibbs, Architect

eral arm-to-arm width of 21 inches are found in most auditoriums where the comfort of patrons is the desire of the management. An extra inch for the so-called "overlap" of end standards should be allowed at the points where each row or section adjoins an aisle.

Provision of an adequate pit for the orchestra and carefully arranged exits for the audience completes the fundamentals of the auditorium plan and, further than the foregoing, in an age when all qualified designers of imagination should be given the freest possible scope to their genius for invention, it is, I think, quite undesirable to suggest the imposition of restrictive measures, either of the choice of architectural style, of proportions or of embellishment. Scholarship and good taste in these matters invariably proclaim themselves to the competent judge as the basis or foundation of the architect's work.

The stage and its adjuncts will depend in size and arrangement upon the predominating use of the auditorium, and will vary from the simple platform and ante-rooms to the modern theater stage with its gridiron, its mezzanines and its elaborate mechanical and electrical equipment. An ideal stage for the hall of miscellaneous uses, to cite the commoner type, would have a floor of slight slope upward toward the back; an ample proscenium opening, richly framing the stage picture, so that the highest gallery seat may command the back drop view; deep wings and a gridiron grade permitting the raising of curtains without rolling; ante-rooms, dressing rooms and



Detail, Hall, Neeley Memorial Building, Vanderbilt University
Henry C. Hibbs, Architect



Photo. Tebbbs & Knell, Inc.

Neeley Memorial Building, Vanderbilt University, Nashville
Henry C. Hibbs, Architect

toilets off the wings and mezzanines; right and left compartments for a generous organ; and a back-stage depth sufficient for free lateral passage behind an adequate depth for scenic back drops. The balance of the program for a Memorial Hall may be elaborated *ad infinitum* and obviously depends upon the requirements of each individual case as it comes.

THERE are many admirable and striking recent examples of the School and College Building as memorials in both public and private educational institutions. Among them is the Samuel Phillips Hall at Phillips Academy at Andover, Mass. This building forms the eastern closure of the new east campus, and terminates a vista of great charm through 700 odd feet of venerable, over-arching elms and over a wide expanse of campus green. Phillips Academy had its architectural beginnings with Charles Bulfinch and Samuel McIntyre. Their buildings are still standing and in continuous use. Its strong Georgian traditions have been perpetuated with extraordinary fidelity in its architectural development. Few of our pioneer educational institutions can boast, as proudly and with as good reason, of so excellent and rare an architectural homogeneity.

Samuel Phillips Hall, among the latest of the additions to the Academy group, is the academic center of the school, as it is also the architectural focus, and the lofty blue-faced clock of its square tower may be seen from every direction. The plan at the granite tower, as one would suppose, is devoted to the entrance vestibule on the ground floor, approached through the central portico of neo-Grec Doric columns. Above the vestibule is the Faculty Room, a high cloister-vaulted chamber in French gray plaster and tobacco brown mahogany. The wings of the building are devoted exclusively to class recitation rooms, served by corridors on all three floors, and differing from typical school rooms mainly in that the classes are smaller than 30 as a rule, though occupying the usual classroom area. This gives generous elbow room to each student and an air of liberality. Each such recitation room, and there are 28 in all, is dedicated and inscribed to the memory of some Andover boy,—a student years ago.

The exterior is of dark red, water-struck brick over a ground story of granite like that of the tower, and the exterior trim is of clear white pine painted with a white containing a suggestion of warm gray. The roof is of mottled green and purple Vermont slate. The interior floors, except for a vestibule of white marble with slate accents, are of waxed linoleum. The walls and ceilings are of plaster in varying tones of warm French gray and ivory, with windows in deeply paneled embrasures, after the manner of many of the best earlier Georgian examples.

It may be of more than passing psychological interest to note that in nearly all Andover buildings where stained natural woodwork has formed the trim, it has been a challenge to some boys to give vent to their excess of physical energy through pen-

knife carving of initials, or more ambitious sculpture, after the manner of English schools. On the other hand, the rooms that have been finished in white paint or light enamels are left, almost without exception, quite unmolested by the amateur craftsmen.

THE isolated Memorial Tower, erected in the open space of a village green or college campus among the trees, is always, when gracefully designed in just appreciation of architectural scale, a pleasing architectural landmark and a distinguished memorial. Its utility, though perhaps a secondary consideration, may, and usually does, lie in its four-faced time-piece, and its lantern, frequently made the enclosure for a chime of bells or a musical *carillon*.

Economy in cost suggests the adoption of the wind-braced steel frame encased with stone or brick, although the tower of solid masonry is, of course, more permanent. If the upper chambers of the lantern are to contain either a 12-bell chime or a modern *carillon* of two or more chromatic octaves of bells, the external openings of these chambers should be arranged to offer the minimum of obstruction to the release of the sound waves. The *carillon*, as distinguished from the chime or peal, has its bells fixed instead of hung to swing. Directly beneath the bell chamber should be the compartment for the clavier, and the dummy or practice clavier upon which the novice may learn without inflicting the crudities of his early efforts upon the community. The ceiling of such a compartment should be sound-proofed to prevent the direct receipt of the tones from the larger bells, since their volume and intensity are so much greater than those of the bells of high pitch that the latter cannot well be heard, and the musician is unable to judge properly of the tone blending. Windows in this compartment are essential, so that he may hear the bells with a great degree of uniformity.

Beneath the clavier chamber should be the clock chamber, which ought also to be insulated against varying temperatures for the good of the timepiece. All these chambers should be served by a comfortable stairway as the *carillonneur* must make this climb for each of his recitals. The playing of a *carillon* is strenuous physical exercise, each bell clapper being swung through direct vertical pull upon the clapper wires which are in turn attached to the horizontal levers of the clavier at the foot and to an ingenious lever action at the bell clapper so arranged as to strike a rebounding blow. The bells are never damped, as are the wires of a piano, and all the tones and over-tones must mingle with one another as they will, and decay naturally. This interesting and very complex sound interference gives to *carillon* music its marked individuality, and it should not for obvious reasons be imposed upon a community by a novice. In the hands of such artists as one finds, for example, in Belgium or among their pupils here, *carillon* music is music of rare charm, and the *carillon* tower is, I think, destined to find greatly increased vogue as a civic or college memorial in this country.

The University Lecture Hall

By JAMES W. O'CONNOR

CHANGING conditions and changing requirements continually change and modify the architectural designs which serve them. We plan and design theaters, schools, hospitals and railroad stations very differently from the way we designed them in the eighteen-nineties, and they are vastly different from what obtained in the eighteen-eighties. Sanitation, ventilation, convenience, circulation and general appearance, most of which elementary considerations were lacking in early public and semi-public buildings, are now as a matter of course the basis of the architect's work. And with due provision for them, so efficiently contrived as to escape the notice or attention of the public, architecture has further thrown over all an attractive and seemly guise. Our important buildings of today, certainly, cannot look as dismal, as banal or as absurd fifty years from now as similar buildings of fifty years ago look today. It is more, too, than a mere matter of changing fashions. We sincerely believe that our architecture is better intrinsically than ever before.

With the changing of the conditions and requirements governing architectural design, university and college buildings have been no exception to the rule. We look at some of the earliest foundations, such as

Harvard, Princeton and Yale, and find that the original groups of structures consisted chiefly of central administration buildings, a few dormitories, lecture or recitation halls, libraries and chapels. At Harvard, for instance, there is old Massachusetts Hall, originally designed as a dormitory, no more suited for its purpose than for a contemporary town hall. Later there was Sever Hall, a building devoted entirely to recitation rooms, classrooms and lecture rooms. These rooms, generally speaking, were inadequately designed for their purpose, as judged by modern standards, notwithstanding the fact that Sever Hall, for instance, was the work of Richardson, in the heyday of the Romanesque revival. The Romanesque aspect of such buildings is not to be caviled at, aesthetically considered, but from the practical standpoint we can honestly feel that great progress has been made since the eighties.

University buildings of the Sever Hall period were generally poorly lighted, poorly ventilated, and with seating arrangements very inconveniently worked out as to circulation. They were awkward to fill and to empty, and there were only wood floors and stairs throughout. Lectures in this kind of a building may not have been so dreary, actually, as the en-



Photo. Tebbes & Knell, Inc.

College of Agriculture, University of Illinois, Urbana
Charles A. Platt and James M. White, Associated Architects



Photo. Paul J. Weber

Detail, Science Building, Boston College
Maginnis & Walsh, Architects

vironment inevitably made them seem to the students.

The greatest fundamental change in the university or the college of today is in its thorough departmentalization. Law, chemistry, architecture, physics, philosophy, all have their separate buildings, which house under one roof the rooms that might be called workrooms, such as laboratories, lecture rooms and often special libraries. This change has naturally followed the change in curriculum from the old standardized "academic course" to the elective and vocational type of curriculum now generally accepted. Specialization in work after college is anticipated by specialization during the college years. Such a structure as Robinson Hall, the architectural building at Harvard, is typical of the modern departmental university building; so is Avery Hall, at Columbia, both of which buildings were designed by McKim, Mead & White. In Robinson Hall there are lecture rooms, a library and drafting rooms, as well as sundry professional offices or studies, storage rooms, lavatories and all the necessities of a building which represents a complete educational unit in a large university.

Of the design of the lecture rooms in a building of this type there is little to be said, and that little is mainly of a practical and even obvious nature. As much light as possible should be provided, and as



Photo. Tebbs & Knell, Inc.

Science Building, Emory University, Atlanta
Henry Hornbostle, Architect

much hall and aisle space for the easy and orderly assembly and dismissal of classes. All such rooms should be provided with artificial light as adequate as the daylight, since nothing makes a lecture more difficult to follow properly than a poor light which tries the students' eyes when they take notes or attempt to read matter placed on the blackboard. Ventilation too is a highly important factor, and should be amply provided, not only for general hygienic reasons, but because stale air dulls mental alertness, produces drowsiness, and often results in headache if the student attempts to concentrate in spite of it. Inadequate ventilation and inadequate lighting together can be seriously regarded as definitely defeating the whole effectiveness of lecture courses and needlessly hampering instructors and students alike.

In all buildings planned for vocational education the workrooms, such as laboratories or drafting rooms, are quite rightly arranged to get the best light and the greater proportion of the total floor area of the building. Unless the greatest care and thought are exercised by the architect, the class or lecture rooms, regarded as relatively less important, may be crowded into inadequate space and so disposed that their proper lighting and ventilation are impossible. The obvious plan for the type of depart-



Photo. Tebbs & Knell, Inc.

Detail, Hamilton Hall, Ohio State University, Columbus
J. N. Bradford, Architect



Photo. Tebbs & Knell, Inc.

Educational Building, Florida State College for Women, Tallahassee
Edwards & Sayward, Architects

mental building here considered is the short-armed H, or "dumb-bell" plan, in which two wings, fully lighted on three sides, are connected by a central portion. Here, of course, the workrooms would be located in the light and airy wings, and the central part would accommodate several small classrooms, the entrance foyer and corridors connecting the wings. If it is possible to accommodate all the necessary workrooms on the upper floor of, for example, a two-story building, better results are obtained. Rooms on both floors can secure better light and ventilation through loftiness, the workrooms on the top floor in the central portion can be lighted from two sides and also from skylights, while the first floors of the wings can be devoted to large, light and airy lecture rooms, and the first floor of the central portion to professors' offices and studies and files, with storage and lavatory provision in the basement.

Perhaps the most important factor in the evolution of the modern university and college building, as in all other types of buildings, is to be found in the greater architectural intelligence which is being used in its designing today. The requirements of a given building are duly listed and given their relative importance. The plan is based on these, rather than upon some such abstract architectural idea as the plan of a Romanesque basilica, and the whole combination of requirements is coördinated architecturally into a building of definite practical value and agreeable architectural consistency. There are no special rules or formulæ. The thing is simply a matter of providing logically and intelligently for the specific uses to which a building is to be put,—a procedure highly applicable to the design of lecture halls, whether in departmental buildings or in buildings devoted entirely to lecture halls, or to any purpose.



Photo. Tebbbs & Knell, Inc.

Entrance Detail, Science Building, Emory University, Atlanta
Henry Hornbostle, Architect

The American University and Its Library Problem

By CARL F. GOULD

Of Bebb & Gould

THE tendency of students to congregate in large and ever-increasing numbers at American universities, especially those under state control, is causing one of the outstanding problems of educational institutions at the present time. Not only are the universities finding difficulty in keeping pace by providing adequate facilities for their increased enrollment, but they are finding it difficult even to provide adequate library facilities, without which no institution of learning can properly perform its functions or retain its standing as an educational center. During the last ten years a number of notable university libraries have been built, among them the libraries of the Universities of Michigan, Minnesota, California and Iowa, the library of the Leland Stanford University, the Widener Library at Harvard, and libraries of the Universities of Toronto and British Columbia. Yale expects to be in her new Sterling Memorial Library in 1930. The University of Washington's first unit will be made available for use in October of this present year.

As typical of the increase in student attendance, the University of Washington had enrolled in 1900 fewer than 500 students. At the present time the enrollment has increased to well over 7,000. Founded in 1862, the University some 30 years ago moved from its restricted downtown district to what was then about four miles to the north of Seattle, to a forested promontory of 600 acres surrounded by lakes. In 1908 the Alaska-Yukon Pacific Exposition was held on its campus, and this rapidly growing University inherited extensive development in which temporary buildings had soon to be replaced by permanent structures. Olmsted Brothers, in collaboration with John Galen Howard, designed and directed the work of laying out these beautiful grounds and buildings. Six years later, in order to procure a plan adequate to the growing physical needs of the University, a faculty committee, of which I was a member, prepared a program embodying a comprehensive survey of the institution's future needs. With this program as a basis, the firm of Bebb & Gould was employed by the board to make detailed grouping plans interpreting its provisions which, in 1915, were accepted and became the working basis for all future construction. The campus plan adopted at that time has

been consistently followed, and each academic building, ten of which have been constructed, has been located in accordance with the plan originally outlined.

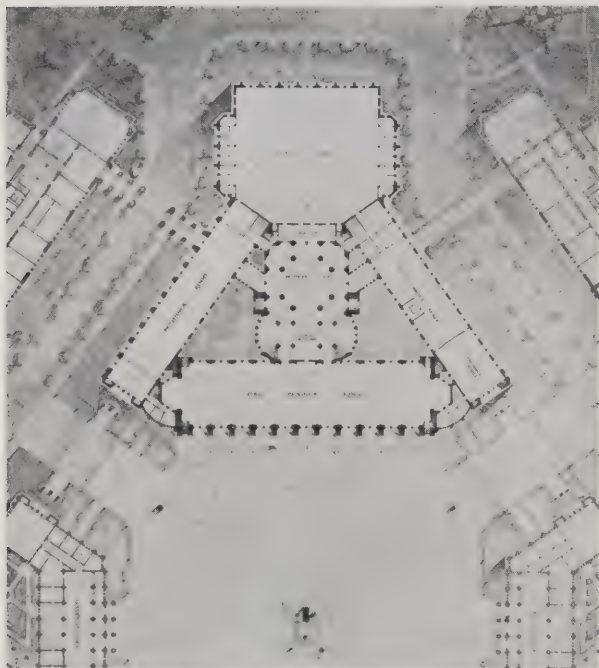
The main axis of the grounds, which was designed so as to terminate on Mt. Rainier, 80 miles to the southeast, was retained and has become the axis of the Science Quadrangle, about which four buildings have been built. An intersecting axis at an angle of 110°, created by the ground formation, has become the axis of the Liberal Arts Quadrangle, upon which four of its seven buildings have already been erected. Between these two quadrangles, upon the bi-sector of the two axes just mentioned, has been placed the Library, the first unit of which is to be completed this summer. Its location means that it dominates the plan, and it is so placed that it is equally accessible to all departments and buildings upon the campus. The portion now constructed is 250 feet long and 100 feet high to roof cresting; the building, when completed, will contain 4,000,000 cubic feet and will have a tower which will be 335 feet high.

In character the building is a free adaptation of Tudor Gothic, selected for its adaptability to the Northwest's climatic conditions, which are similar to those of the south of England; the ease with which large decorated window areas could be designed; and for its economy of construction by reason of ease of adaptation to steel and reinforced concrete. Natural stone base; pre-cast hand-tooled stone, pinkish in color to the sills of the second story windows; terra cotta and brick to the parapet wall; greenish gray variegated slate on concrete slab roof with copper cresting; these are the exterior materials used. The cost, including architects' fees, of the portion now under contract is something under 50 cents a cubic foot. Such are the structure and the costs.

After preparing the preliminary program and sketches for the University of Washington Library, we visited the more important university and city libraries in different parts of the country. It was soon found that in most of the universities, libraries which had in some cases scarcely been finished were already too small to care for the unprecedented enrollment that had taken place between the times the plans had been accepted and the times the last units had been erected. To provide a plan, then, for almost indefinite ex-



Model of Library, University of Washington, Seattle
Bebb & Gould, Architects



Plot Plan, Library Group, University of Washington

pansion became one of the essential problems necessary for consideration and for solution if possible. It was found that the large reading rooms were used as great study halls between classes by students who, in many cases, brought their own material with them, thus eliminating some of the work at the delivery desks. In every case the reserve shelf reading rooms were found to be overcrowded, and rooms in which special library facilities had been provided were being made over to give increased reserve shelf reading rooms for the lower division students. Seminar rooms, which certain favored professors had acquired the habit of considering their special quarters, were being turned over to general seminar uses. We, therefore, increased the size of our first floor plan for the library of the University of Washington, and provided two large reserve shelf reading rooms containing 5,000 square feet each, eliminating column supports and providing light on both sides of the rooms, which in width are 52 feet. When other units are added, these spaces can be extended into adjacent wings. For the purposes of centralized control, of economy in operation and effectiveness in interior design, it was deemed advisable to retain the generally accepted scheme of a predominatingly large main reading room, used as the reference and main



Bebb & Gould, Architects

study hall, with reading rooms opening from it.

In some of the recent, as well as in many an older, library the delivery desks are not located on the main axes of entrances, due to some memorial feature, court or stairway which occupies this strategic central location about which the library's activities should flow with the greatest possible freedom. Due to the converging of the University of Washington Library wings toward the delivery desks, this location comes close to the center of gravity of the entire building. Contact back into the stacks is thereby made direct and ample, and the library staff which occupies space in one wing is brought into close contact with the delivery desks. This convergence also permits of books being trucked by a shorter route from the reading room to and from the stacks.

In no case was it found possible, in existing plans, to place the catalog files on a central axis. In spacing the two entrance doors to the main reading room farther apart it was possible, on the delivery room side, to provide ample space between them on a central axis for the catalog cases, and by inserting a small private door the reference librarian obtains access directly into this space, thereby largely obviating the necessity of providing duplicate cases for catalogs.



Entrance Vestibule, Library, University of Washington



First Completed Unit, Library, University of Washington
Bebb & Gould, Architects



Main West Entrance, Library, University of Washington

Bebb & Gould, Architects

By examining the plans it will be seen that all reading rooms are amply provided with windows, in most cases on both sides. In the main reading room the window area is equal to 50 per cent of

the floor area. As in other libraries, there have been provided in the plan a large number of seminar rooms, research study rooms, cubicals surrounding the stacks, library school quarters, special libraries,



Thought



Inspiration



Mastery

Details from Main West Entrance
(Sculptured Figures by Allan Clark)

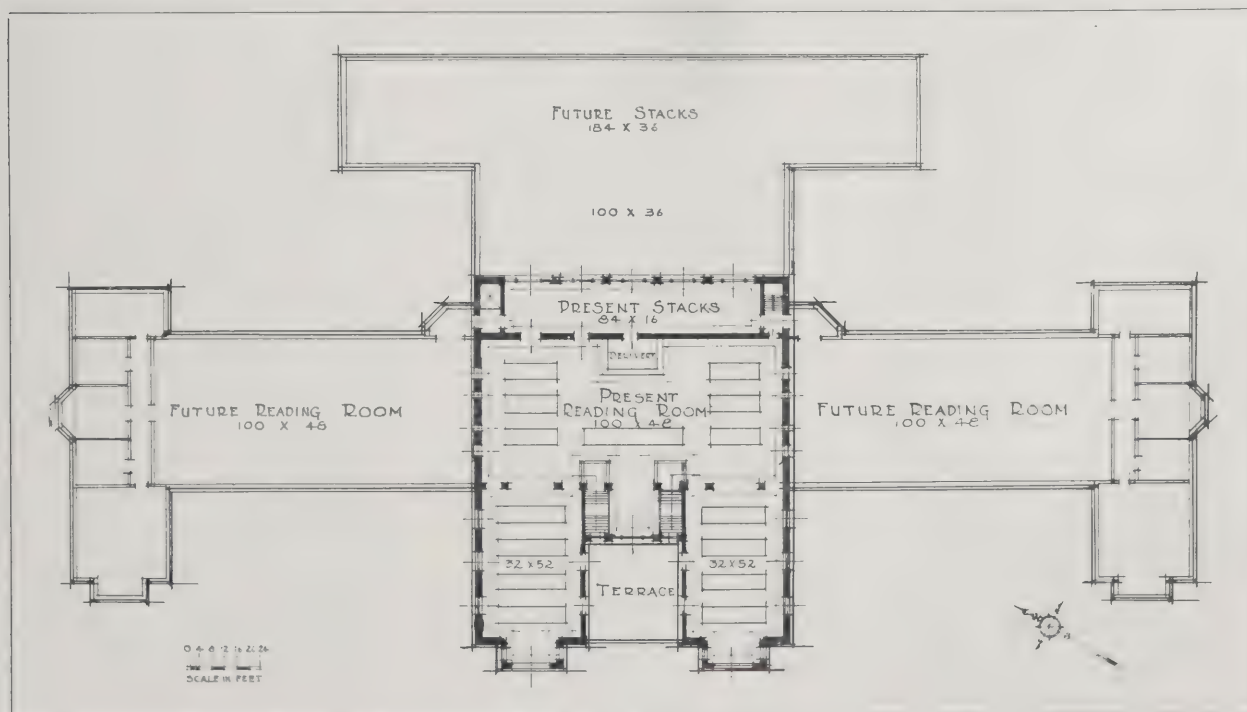


Library, University of British Columbia, Vancouver

Sharp & Thompson, Architects

such as the North Coast History Library, browsing and conversation rooms. The main reading room on the second floor is reached through a vaulted vestibule of pre-cast stone, and is designed with great transverse stone arches separating the bays. The ceiling between these arches is enriched with rectangular paneling. This main reading room is 240 feet long, 52 feet wide and 65 feet high to the apex of the ceiling. The windows filling the space between the main buttresses, 36 feet high, are leaded with glass of slight color variations and textures.

Eighteen figures upon the buttresses, many inscriptions and university shields within and without, are used to enrich or to give interest to the design. Symbolizing the ideal conception of what American education stands for, three figures of heroic size rise over the main tryptich entrances. The central figure, a lightly draped and delicately modeled female, with head thrown back, eyes slightly closed in an expression of ecstatic emotion, represents creative energy or inspiration. The figure at the left, a mature, bearded man whose bent head shadowed by a



Plan, Library, University of British Columbia

cowl suggests learning inherited from the ages, represents contemplation or thought. The figure at the right, a vigorous youth, exhibiting his full strength, nerves and sinews tense, head erect, represents action, ability to put into effect that which inspiration, enriched by contemplation, suggests.

Our faith in education is the most hopeful and outstanding factor of the present times, and our effort put into creating and developing our colleges and universities will bring larger returns for generations to come than any other single factor in our life here today. Education, which originated with and was once a very important function of the Church, is

now largely separated from the Church, but nevertheless retains some of its reverential character. In a university, all departments of learning must draw upon and focus towards its library, the great repository of accumulated intellectual wealth of civilization, from which the students must obtain, either directly or indirectly, their education. In consequence, the library should become, where the physical conditions allow, the dominating building, where by its architectural expression it does or should express this idea of dominance of our intellectual and spiritual ideals in education, and appropriate architectural treatment emphasizes this idea of domination.



Dante



Newton



Gutenberg

Statuary of West Facade, University of Washington
(Sculptured Figures by Allan Clark)

College and University Chapels

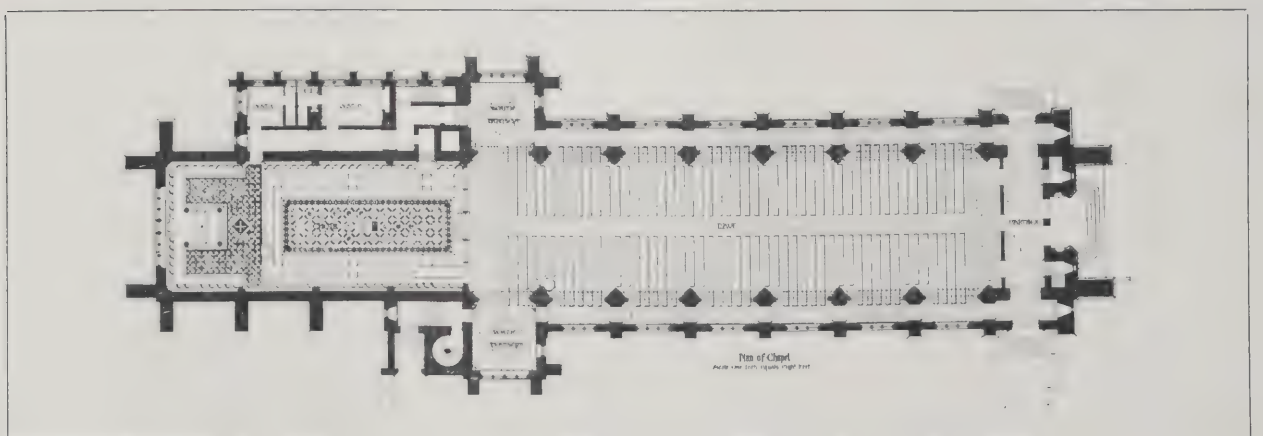
By RALPH ADAMS CRAM

THERE certainly is significance in the present fever of chapel building among the universities, colleges and preparatory schools of America, and I do not think it is the result of either a sudden fashion or of the spirit of emulation; the cause lies deeper than this. The thing happened, of course, in a sporadic sort of way among the colleges during the nineteenth century, but such structures as Harvard's morose effort, the neo-Byzantine effusion at Leland Stanford, and the cute affectations of Princeton's fane, were not of a sort to encourage further experiment any more than was their undergraduate popularity. For nearly a full generation the building of scholastic chapels completely ceased except for that most admirable work of Henry Vaughan's at St. Paul's School, and then suddenly it was taken up again with, if I remember correctly, Allen & Collens' Williams chapel of the beautiful tower, the Vaughan chapels at Groton and Western Reserve, and those for Columbia University and West Point. Within the last five years this progress has become headlong. Princeton and Chicago are just beginning structures that rival King's College, Cambridge in size and magnificence; Mercersburg Chapel is nearly finished, as is that for St. George's, Newport; Wheaton College and Choate School have their chapels completed; the University of North Carolina is going forward with a fine Upjohn design; Harvard has decided to build a great chapel as its war memorial; and there are many others not named, smaller but sometimes equally good, mostly for preparatory schools, and one can safely predict the time when Yale, the University of Pennsylvania, and for all I know the state universities of the middle west will follow suit. It almost takes one back to the old days when men held that education, for its full accomplishment, could not be divorced from religion, a theory still held to some extent today.

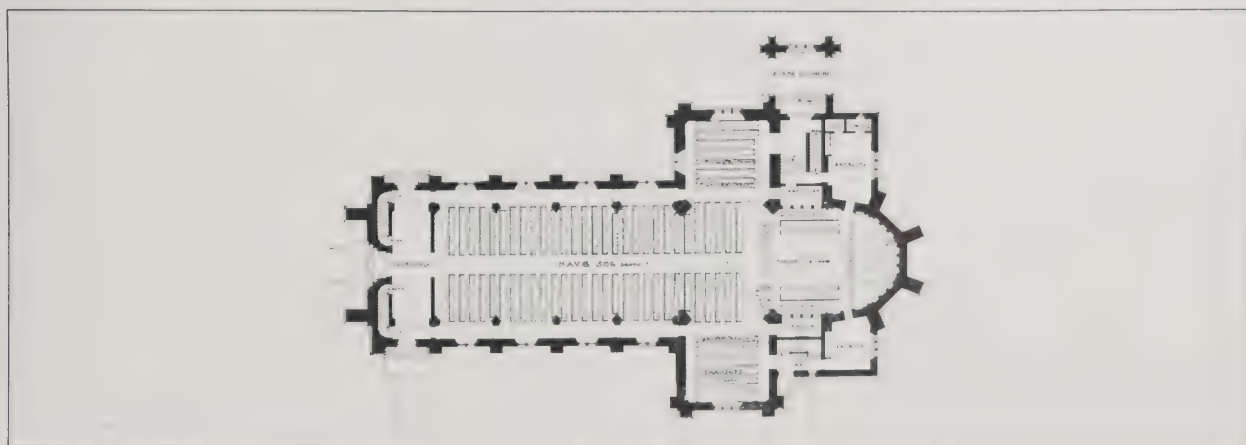
As might be expected, the architectural standard is uniformly high, as high as the respective capacities of the architects permit. How could it be otherwise? In spite of the nonchalance of the schools of architecture, church building is not only one of the most salient industries in architecture today, but it also gives the greatest scope for creative imagination and calls out the best in its creator. All the chapels I have noted are good; most of them more than this, and I have a strong conviction that in their excellence lies the primary power to bring them and their religion back into undergraduate popularity. When you come to think of it, it is not surprising that voluntary chapel became a memory, compulsory chapel an intolerable grievance. Outside of Roman Catholic and some Episcopalian chapel services, there never was anything more deadly, dreary and repellent than the ordinary "prayers" in a borrowed adjacent meet-

ing house or the chief lecture room of an educational institution. The whole thing was ugly and uninspiring, from the architecture (if there was any) to the liturgy, and therefore the revolt of youth was inevitable and wholly to be commended. Will the new chapels with their Gothic beauty and emotional value, their Colonial delicacy and historic stimulus, their soaring columns, mysterious vaults, storied windows, nobly furnished sanctuaries,—will these chapels of a new-old day break down the well earned prejudice and evoke once more the inherent sense of worship and devotion latent in boy and man? It may be, for "youth will be served" with beauty in some sort, though it often doesn't know what it wants, and if it can't get it where it primarily belongs, then it will—go elsewhere. Fine chapels are a good beginning, but only this. If the sort of desiccated devotion and cold storage liturgics that usually pass for a "chapel service" are inserted into these mediæval or Georgian shrines, then the architecture will count for little except the admiration of casual visitors (like an art gallery or a museum of antiquities), for youth has a sufficient sense of saving humor to realize and resent the miscegenation of a chapel as beautiful as those of Oxford and Cambridge and a liturgy as empty and soporific as one finds in some moribund conventicle of the more Puritan persuasion. I do thoroughly believe that the right kind of service in the right kind of chapel would bring the students back with a rush, and the right sort of building is the start; perhaps if it is sufficiently right it will develop the right sort of devotional sense. I have seen this happen in parish churches where it was the last thing looked for by the authorities and where it seemed scarcely possible.

As to what is the "right kind" of scholastic chapel, I do not know that there is anything that differentiates it in quality from any other sort of a church. Like the cathedral or the parish church it must be beautiful, a quality perfectly compatible with simplicity and economy. It must never under any circumstances represent a latent fashion or the peculiar personality of the architect, but must take hold on long and stimulating history through its style and form and quality of suggestion. It must relate itself to the racial inheritance and the present life of those who are to use it. It must be noble, impressive (these qualities do not presuppose bigness) and manifestly honest in construction. The exterior is of minor importance; it is the interior that counts, and in every way this should impress, instruct and evoke. Luxury (fat cushions and that sort of thing) has no place here, but a certain amount of austerity in the student accommodations is desirable. "Without an altar there is no church," and this, together with its surroundings should be as glorious as funds



PRINCETON UNIVERSITY CHAPEL
CRAM & FERGUSON, ARCHITECTS



MERCERSBURG ACADEMY CHAPEL, MERCERSBURG, PA.
GRAM & FERGUSON, ARCHITECTS



Choate School Chapel
Cram & Ferguson, Architects

allow, making use of splendid accessories.

One great argument against Colonial and in favor of Gothic (the other is that it has no historic continuity and no emotional appeal) is that here stained glass cannot be used. This is a hard argument to meet, for, like music, incense, the rhythm of chanting and ordered movement, stained glass has a peculiar power of stimulating the right emotions in the right way. I do not mean glass that in design confines itself to stiff figures of the major and minor prophets and the twelve apostles; still less to that most awful aberration of modernism, the sort of thing that consists in clumsy misinterpretations in an alien medium of the celebrated works of Holman Hunt, Hoffman and Veronese. I mean rather windows that show the great and enduring mysteries of the Christian faith, the saints and archangels that appeal most by their character and their acts to flowering youth; above all perhaps, the working out of these principles and these motives in the terms of human action, and all couched in the terms of that mystical



Interior, Choate School Chapel, Wallingford, Conn.

Cram & Ferguson, Architects

sort of glass that came out of the middle ages as the great contribution of, for once, an entirely new art the new religion had made for its own perfect self expression.

There seem to be cases where, in spite of its limitations, Colonial is indicated on account of the history of the school or the architectural precedents existing. How far one should yield to this argument is a question. Colonial at best is imperfect and decadent; at the worst it is an offense. It has no power of spiritual appeal, no evocative character. It has nothing to do with any vital religion of today, and so far as America is concerned its connotation is of a dead Puritanism; in its English Georgian aspect it associates itself only with the least edifying aspects of the Established Church and the artificial stimulus of the great fire of London. Yet it has undeniable charm, mostly because it arouses memories of our own history, already becoming mythical and romantic. Hawksmoor and Gibbs handled the Classic of their day with a certain freedom and even romanticism that indicate a possibility here when, as I say,



Interior, West Point Chapel
Cram & Ferguson, Architects



Chapel, University of the South, Sewanee, Tenn.
Cram & Ferguson, Architects

Colonial is inevitable. To copy a Puritan meeting house and call it a school chapel is folly, but some of the Church of England models in this country, as well as several of the London churches, do give suggestions as to methods whereby the essential qualities of the problem in question may measurably be attained, though less directly, easily and completely than by the use of Gothic. One point sometimes overlooked is that while Colonial adapts itself to moderate requirements as regards seating, and therefore, in this respect, is not inappropriate for small colleges, it is less amenable when it comes to university chapels where the seats must run to two thousand or more. The moment you get beyond half this number you are outside the spirit and scale of the style, and the whole value is lost. This seems to be pretty well recognized, for with the exception of Columbia and Annapolis all the great chapels already built are Gothic, while those for Princeton and Chicago are to be the same. What Harvard is to do a little later is not yet revealed.

The question of plan was well worked out in the middle ages. A school chapel is neither a parish church nor a cathedral. The whole body of students provided for must be given a clear field and view, which means generally a simple parallelogram without transepts or aisles. Whether the student body should be accommodated choir fashion as in the English chapels, or facing the chancel after the manner of a parish church, simply depends on whether they are considered and utilized as part of the "ministers" in a service, or whether they are simply a congregation ministered to. In the old days the former status was invariable. Students were "clerks" and took part with the priests and other orders of clergy in carrying on the services of worship. Where they sat was simply an enlarged choir; whatever lay outside the screen, the "ante-chapel," was for the congregation, such as it was, a small and casual and more or less negligible body. After the Reformation this idea was abandoned, so far as new foundations were concerned, and in America, wherever a school chapel was built, which was seldom, the congregational arrangement was adopted. Of late a number of preparatory schools have reverted to the ancient mode, St. George's, Newport, being the latest in the list. There is a good deal to be said for this plan, but only so far as small

numbers are concerned, three or four hundred at the most. University chapels must perforce adopt the congregational plan. Perhaps the best solution is that which obtains at Princeton, where a large choir provides enough stalls for those who may reasonably be expected to daily services, three hundred more or less, while the great body of the church gives regular pews for seventeen hundred more for preaching services and for special occasions or solemnities.

Undoubtedly, in spite of Oregon, some of the more powerful fraternal orders and the most efficient and pervasive Protestant organizations in America, religion is coming back to take its due place in all systems of private and public education, and therefore the question of the right sort of chapel and the right sort of religious service will come increasingly to the front, exactly as has happened in the case of parish churches and cathedrals. Until the schools of architecture and the theological seminaries wake up to the fact that there is such a thing as religious art of all kinds, and that it is a matter of supreme importance, we must go back to the historical monu-



Model, St. George's School Chapel, Newport
Cram & Ferguson, Architects

ments for our inspiration and guidance. Fortunately, England knew the value of religion in alliance with education at exactly the moment when her architecture and other arts were at their highest point of perfection, so back to Oxford and Cambridge we may safely go for precedent and precept. There are no better models, both in form and in spirit, and increasingly, I fancy, recourse will be had to these masterpieces of Christian art, as the call becomes insistent for more and more of these great educational and character-building factors. I know of nothing else that can serve the same purpose. And, as has been already suggested here, newer institutions of learning are not entirely without their fanes which give tangible, visible expression to the spiritual truths which they strive to inculcate. Such examples are as yet, of course, only too rare, but their mere existence constitutes a promise of far better things which are surely coming. It might be noted that what is sometimes complained of as "godlessness" in education prevails at just the time when chaos seems to reign in a great part of the religious world. All this may be but a characteristic of a passing and temporary phase, and the reaction when it comes will be powerfully aided by architecture's important function.

Planning of College Infirmaries

By WILLIAM J. SAYWARD

Of Edwards & Sayward

IN considering the problem of designing hospitals for use in connection with colleges and universities, the architect should not lose sight of the fact that the governing principles are distinctly different from those encountered in the planning of hospitals for general practice. The normal functions of the college hospital, or more properly the infirmary, are those of "first aid" and the treatment of very mild cases. Serious cases that require major operations or long confinement should be, and usually are, transferred immediately to general hospitals where more ample accommodations and larger facilities are provided. It should also be remembered that the college infirmary is the headquarters for the treatment of all minor ailments and the dispensing of all medicine, whether the patient is confined to the infirmary or is able to be about his daily work. Provision should be made, therefore, to care for the outpatient. Usually the office of the resident physician will serve this purpose, adequately handling those patients who must continue to report daily, so that special clinical rooms are likely to be unnecessary.

Because of these prime considerations comparatively small plants will satisfactorily serve the needs of most large educational institutions. However, although the college infirmary can thus be considerably smaller and less elaborately planned than the general hospital which must handle all types of illness and surgical cases, the specific needs of the institution concerned must be kept in view. The number of students to be served will govern the size, ordinarily, but consideration must be given to the location of the college with reference to other forms

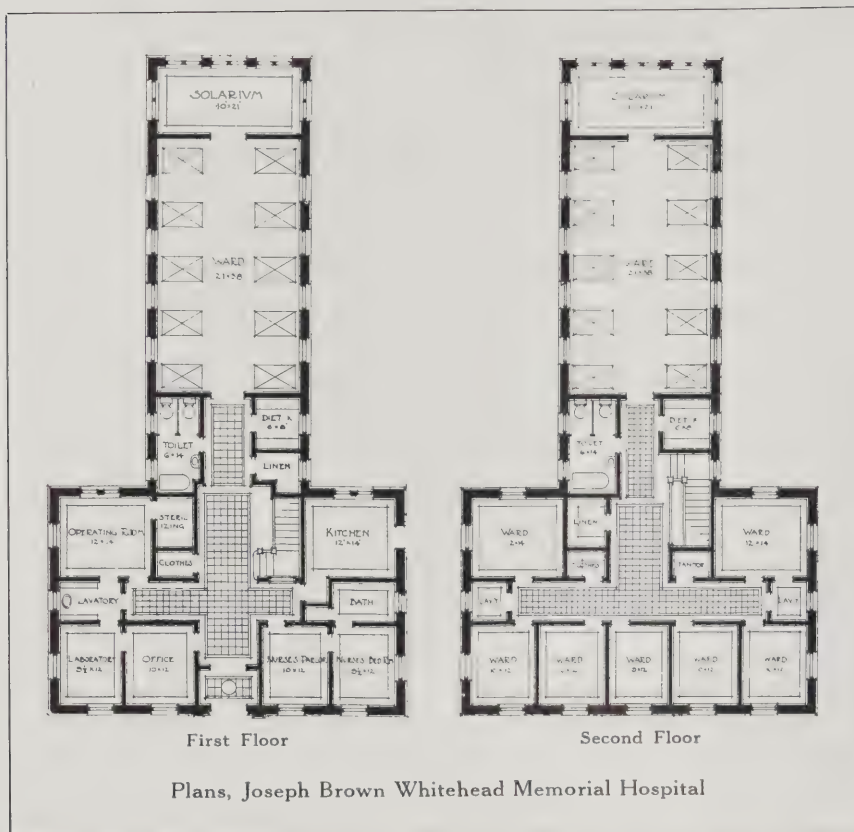
of medical service. If remote from a large city where a good general hospital is located, the college infirmary must naturally be larger and more completely equipped than if situated within easy reach of such institutions. The equipment for any infirmary, large or small, should be sufficiently complete and serviceable to care for any reasonable contingency or emergency. Much has been done during the last few years to improve the character of service rendered in hospitals of all types,—so much so, in fact, that today hospitals even in small places are fitted with equipment far superior to that which obtained a decade or so ago in even the largest institutions.

The infirmary for the Florida State College for Women, illustrated here, is intended to care for the needs of an institution attended by approximately 2,000 girls. In determining the site for this building, a location was selected which was removed as far as possible from ordinary travel, but at the same time near enough to the other buildings so that direct passage therefrom could be obtained by means of a covered passageway. As already said, in institutions of this kind the common practice is to bar all medicines from the students' rooms and to require that none be administered or taken except under direct advice of the resident physician. It is necessary, therefore, that ample provision should be made for the offices of this functionary. Among such provisions a surgical preparation and operating room is desirable for minor operations and for emergencies and for the epidemics which sometimes occur.

There is also, of course, the necessity that provision be made for a resident nurse who shall be



Perspective of McKinley Hospital, University of Illinois
Charles A. Platt and James M. White, Associated Architects



available at all times. A small kitchen should be provided for preparation of such simple diet as is permitted the patients, and a small dining room for those who are able to assemble there for their meals. A day room for reading or other appropriate activity should also be included in the plan, for the use of convalescents. It is well to have an isolation ward with provisions for a nurse's bedroom, diet kitchen and toilet, so that every attention can be rendered a contagious case without direct contact with the rest of the infirmary. It is also well to provide an elevator of sufficient size to carry a reclining patient. Local climatic conditions at the Florida State College for Women made it quite desirable that the principal wards should be open air pavilions, while closed wards were provided for special cases and



Photo. Tebbis & Knell, Inc.

Joseph Brown Whitehead Memorial Hospital, Georgia School of Technology, Atlanta

Pringle & Smith, Architects

also for purposes of isolation.

The infirmary for the School for the Deaf and Blind, at St. Augustine, Fla., is also mentioned here in order to present the handling of distinctly different conditions. This institution cares for pupils of both sexes, from 6 to 18 years of age, which obviously necessitates segregation not required in the infirmary just considered. The building as erected more than amply provides for an institution of 250 pupils. Owing to the small number of patients, it is quite possible in this instance for one nurse to care for all. In order that satisfactory supervision might be given under these conditions, the nurse was given a room directly connecting with two wards, that for the girls and that for boys. As in the other example, an office for physicians is provided, but it was not considered necessary to provide for a separate operating room. Here again ample provision has been made for outdoor life on the sun porches at either

end. A small diet kitchen and dining room are likewise provided. On the second floor are several small wards for special cases and an isolation ward with diet kitchen and also accommodations for the nurses.

In summing up, it is perhaps unnecessary to point out the desirability, when planning an infirmary, of arranging for private rooms as well as for wards to

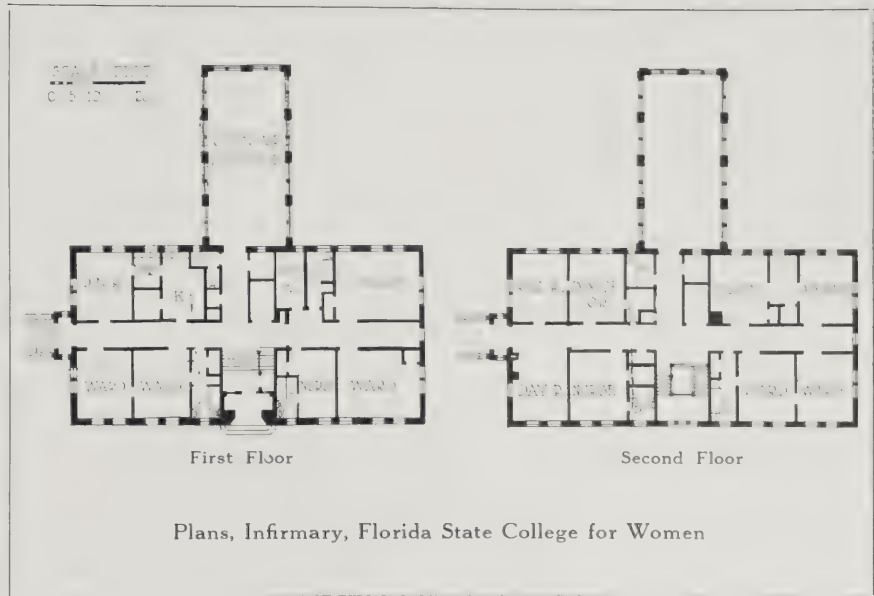


Photo. Tebbes & Knell, Inc.

Infirmary, Florida State College for Women, Tallahassee
Edwards & Sayward, Architects

accommodate patients in varying numbers. There are times when individual rooms are desirable if not absolutely necessary, just as there are other times when it is needful that patients be not entirely alone, and it should not be difficult to plan for both these sets of conditions. It should not be necessary, either, to suggest here the advantages of using ramps wherever possible instead of stairways, or of selecting flooring materials with a view to their being easily kept clean. Architects planning buildings of this character for universities or colleges might bear in mind the fact that during the past few years buildings such as infirmaries have come to be regarded in a light quite different from that of a generation ago. Today an infirmary or even the average hospital is being given at least a semi-domestic character, such as a patient presumably would have in his own home. Particularly in the smaller hospitals, the tendency is to treat interiors so that the satisfactory progress of patients is facilitated, and bareness

is not in the least necessary for meeting any known sanitary requirement. A room or a ward in an infirmary is likely to be far more useful in hastening the recovery of a patient when it is homelike than when it strongly resembles the interior of a morgue.

In addition to having a head nurse, the larger college or university infirmary is likely to require a matron,—unless she is known as a housekeeper. A nurse's functions are of course concerned with nursing, and have little if anything to do with directing the housekeeping of an infirmary. With this in view, there should be provided appropriate quarters for a matron or housekeeper, placed preferably where control over the entire building may be exercised. Provision of living quarters for nurses and for the servants required in an infirmary should not be overlooked, although whether they are or are not to be provided is one of the many questions which can be answered only when the size and requirements of the institution to be served have been well studied.



Photo. Paul J. Weber

Main Entrance, Vanderbilt University Hospital, Nashville
Coolidge, Shepley, Bulfinch & Abbott, Architects

Designing and Planning Laboratory Buildings

By HARRY S. WATERBURY
Of the Firm of Delano & Aldrich

A UNIVERSITY chemical laboratory, like every problem which comes to an architect, is a matter for special study,—only perhaps a little more so. The difficulty, however, lies principally in solving problems of the mechanical equipment, and this will vary with each problem. The question of the building, whether it is to be a one-story or a multi-story structure, will be decided by local conditions, but there are requirements which will be found common to both varieties of buildings.

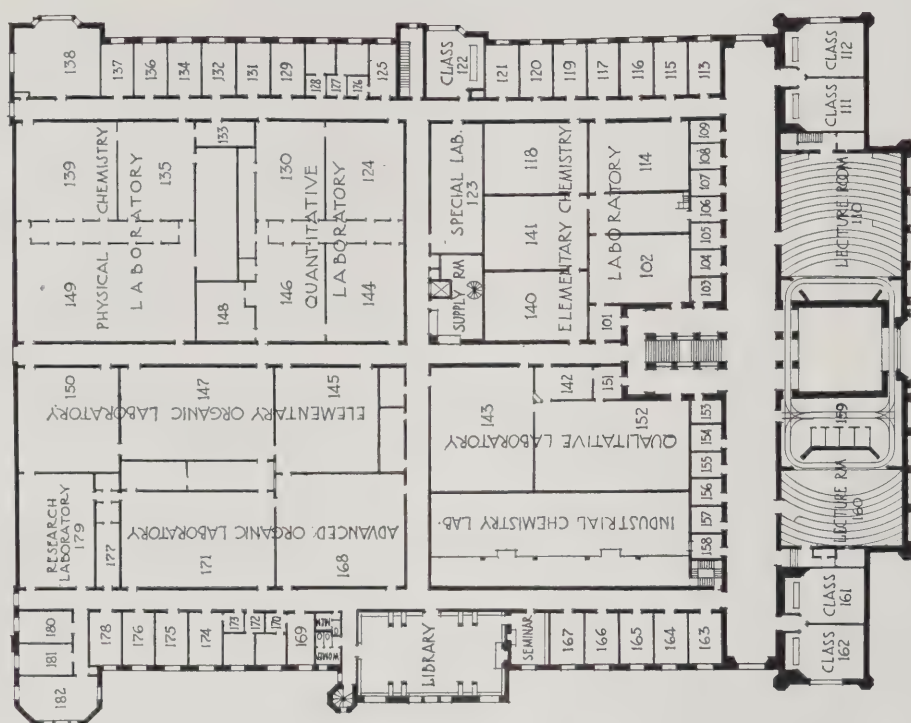
The operation of a chemical laboratory is best conducted by dividing the building into three divisions,

—one for instruction in class and lecture rooms; one for research; and the third for general student laboratory work. The first section can well be separated from the rest of the building, as its use, its ventilating, heating and lighting requirements are distinct from those of the other portions. Such a segregation will minimize the expense of operating; odors connected with laboratory work can more easily be eliminated from these rooms; and the rooms themselves, if needed, can be used for other than chemistry classes. These class or recitation rooms will be similar to those of the recognized

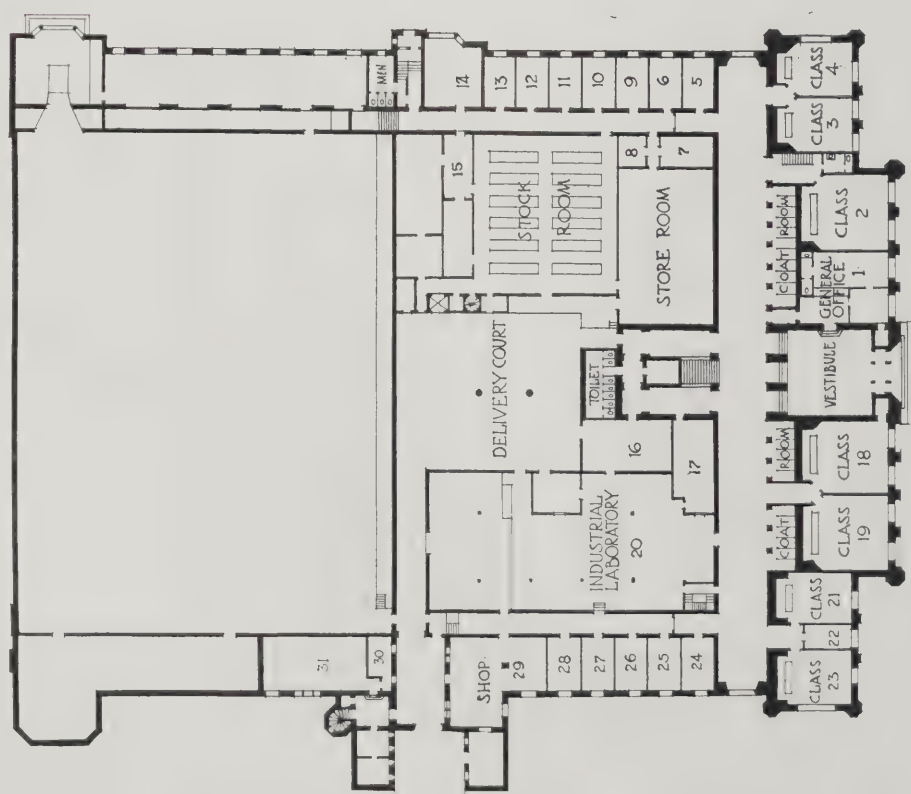


Photo. Dix Duryea

Entrance, Sterling Chemistry Laboratory, Yale University
Delano & Aldrich, Architects

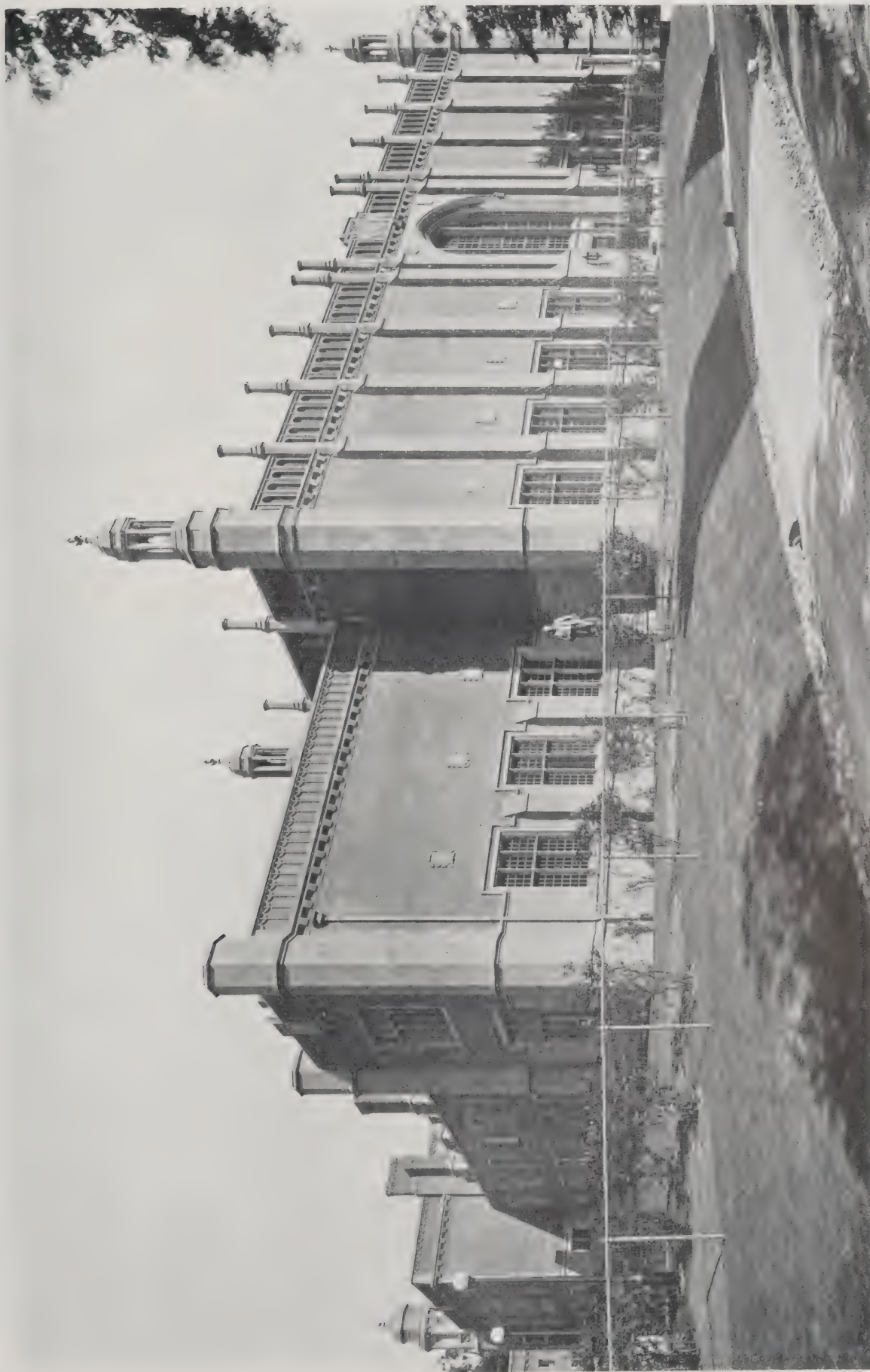


SECOND FLOOR



FIRST FLOOR

PLANS, STERLING CHEMICAL LABORATORY, YALE UNIVERSITY



STERLING CHEMICAL LABORATORY, YALE UNIVERSITY
DELANO & ALDRICH, ARCHITECTS

Photo, Dix Duryea



Laboratories for general student work, being the principal portion of any chemistry building, adequate provision for the best working conditions are imperative. Note the construction of these double-glazed skylights over the student laboratory at Sterling Laboratory

standard, except that the lecture tables will be supplied with sinks, down-draft, gas, water, etc. In addition to the classrooms a large lecture room or rooms should be included in the building. This

room should be provided with the usual auditorium ventilation and arranged so that each occupant has a clear view of the top of the lecture table. Means for darkening the room (conveniently operated from the lecture table) should be provided, and possibly a motion picture booth should be included. Blackboards and a stereopticon machine will also be needed. The lecture table is more or less of an elaborate installation, where a vent hood or exhaust duct and appliances for supplying gas, water and electric current are available. In some cases a long table is employed, and experiments are prepared between classes. In others, a short section of the table accommodating supplies is stationary, and movable sections on which the experiment of the hour is assembled are brought in from the adjacent preparation room when wanted. By using several mov-

able portions, the time during which the lecture room is in use is saved, and experiments which are needed repeatedly are not disturbed. A preparation room adjoining will be similar in many respects to a re-



In the student laboratory, Sterling Chemistry Laboratory, soapstone table tops supported on metal standards provide working space. Sinks of earthenware run through the tables and accommodate four students each. The cabinets below the tables are independent and are placed on cement islands

search room, but it should provide a considerable amount of storage space for the apparatus which is necessary.

The second section of the chemical laboratory, intended for research, will be composed mostly of small rooms. A room 12 x 20 equipped with one hood, with work tables around the walls, in which two sets of supplies and sinks are installed, has proved satisfactory. Such a room could accommodate two men. Two or three rooms for group research should also be supplied. Operators in these rooms are likely to be instructors or professors, so this entire group of rooms should be in close proximity to the main student laboratories to render their use convenient.

The third division (for general student laboratory work) is necessarily the principal part of the building. It is well to keep in mind that this portion is merely a workshop, and that everything that is not of definite use should be eliminated. Several separate departments will probably comprise this group,—laboratories for elementary organic, analytical, physical chemistry, etc. As great quantities of supplies for student work are needed, an



Because of the extremely delicate types of instruments housed in this balance room at Sterling Chemistry Laboratory, the room is ventilated only by air forced in. It is exhausted only when the doors are opened

ideal plan to reduce upkeep would be to install one supply room connected with a large storeroom placed, perhaps, below it. This room would occupy a hub



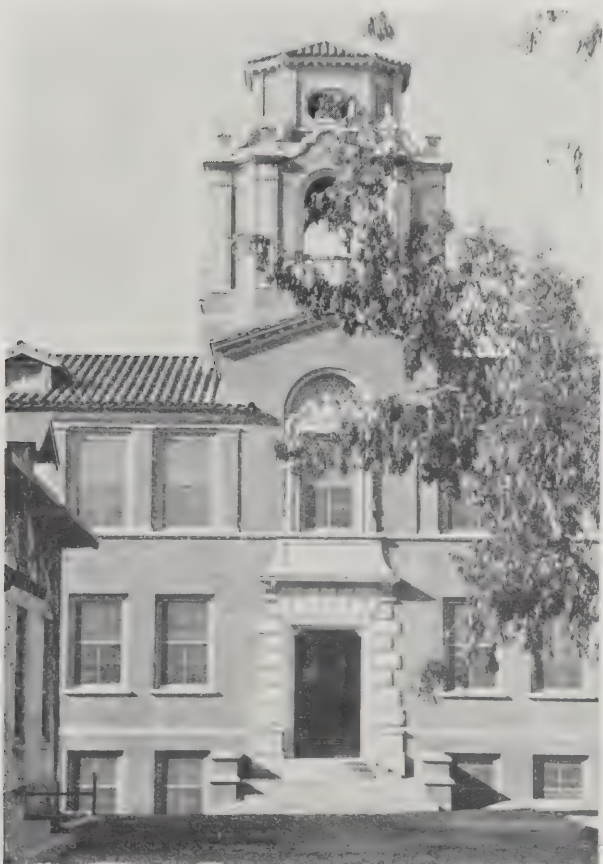
The lecture room, Sterling Chemistry Laboratory, has its lighting regulated by a skylight butterfly shutter operated from the stationary center lecture table. Movable sections of table roll on tracks to preparation room at back. Note down draft in center section of table and fume closet in blackboard



Entrance, Steel Chemistry Building, Dartmouth College,
Hanover, N. H.
Larson & Wells, Architects

position, with the various laboratories surrounding it. Such a plan, however, is feasible only when all laboratories are on one floor. In a university where great quantities of student supplies are checked up at the beginning and end of the term, as well as delivered throughout the study periods, the advantage of having one person responsible for the entire work is readily understood. In a multi-storied building a supply room should be located on each floor, in a position adjacent to or convenient to the laboratories.

The arrangement of the different laboratories in this section is much alike. Work tables occupy the middle of the rooms, with wall tables, shelves and vent hoods surrounding. Tables are generally planned so that two or more students use one sink and are supplied with gas, etc., as required. There should be locked compartments below the tables for individual student use. In some cases each student has a down draft, but this system is seldom employed on account of the expense involved. Vent hoods of soapstone and wired glass are generally installed. If a unit size is planned in laying out tables, it will allow a flexibility of use which may be desirable later on. Skylights give a most satisfactory light in these rooms, since of necessity they must be ventilated in any case. In a fireproof building cement floors are the cheapest and probably the most satisfactory. A rubber runner between the work tables removes the usual objections to this type of flooring. A variety of flooring, such as asphalt for acid rooms, may be



Main Entrance, Mason Hall of Chemistry, Pomona
College, Claremont, Calif.
Jamieson & Pearl, Architects



Detail, Chemical Building, Johns Hopkins University
Carrere & Hastings, Architects
Shreve, Lamb & Blake, Associated

advisable in special cases. The tables themselves may be made with soapstone tops and metal standards, although occasionally a preference for pine-topped tables is found. All equipment should be standardized as far as possible, not only for initial economy but in order to minimize the cost of replacement; for instance, one type of outlet can be used for water, gas, steam, compressed air, vacuum, hydrogen sulphide, distilled water, etc. If hot water is desired, a convenient method is to run steam to the sinks and attach a steam mixer to the equipment.

Possibly the most important item of consideration in the student laboratories is that of ventilation. This has been solved in a number of cases more or less successfully. No matter what means are employed, success depends on intelligent operation, and theoretically perfect installations prove practically useless when operated in ways contrary to those contemplated in the original plans. Where laboratories are all on one floor, the employment of a plenum space under this entire area is advisable since it allows not only air spaces where necessary but provides an area where all pipes and wastes may be run. In this event by merely puncturing the floor, gases, water and current may be readily and economically delivered when and where desired, with a minimum of disturbance in the laboratories. In general, tempered air should be supplied to the rooms and taken out at the hoods. The means of controlling hood ventilation vary. Sometimes fans are employed on each



Detail, Chemical Building, Rice Institute, Houston, Tex.

Cram & Ferguson, Architects
William Ward Watkin, Associated



Entrance, Cruikshank Hall of Zoölogy, Pomona College
Robert H. Orr, Architect; Jamieson & Spearl, Consulting Architects



Entrance, Physics Building, Emory University, Atlanta
Henry Hornbostle, Architect

hood. Again a group of hoods are vented by a remote fan controlled at each hood, and in another system ventilation is left to work through the hood by gravity. In the last instance, ample tall chimneys are necessary to assure results, and they should be on inside walls. It goes without saying that the fewer motors about a chemistry laboratory the better, and the use of natural means for clearing the workshops is becoming constantly more popular.

Some of the numerous special rooms which are included in a building of this type might be mentioned: An industrial laboratory. This should be a high-ceilinged room where experiments on a large scale are conducted. It might well have a series of galleries along one side, and should be provided with a crane running its entire length. Such a room is well placed near an entrance for the convenient handling of heavy apparatus. General office with vault. Balance rooms, where rigid tables are necessary and located as far as possible from fumes. Furnace rooms, so as to reduce the noise and heat in laboratories. Rooms for poison gas experiments. Library, accessible to students during working periods.

Machine shop. Storage room for combustibles, preferably placed outside the building. Room for the storing and bottling of acids. Room for the preparation of solutions and re-agents. Chemical storeroom. Glass-blowing room. Hydrogen sulphide room, with generating apparatus. A room for drafting and one for photographic purposes might be included. An outdoor table, if a flat roof is available, for experiments best conducted outdoors.

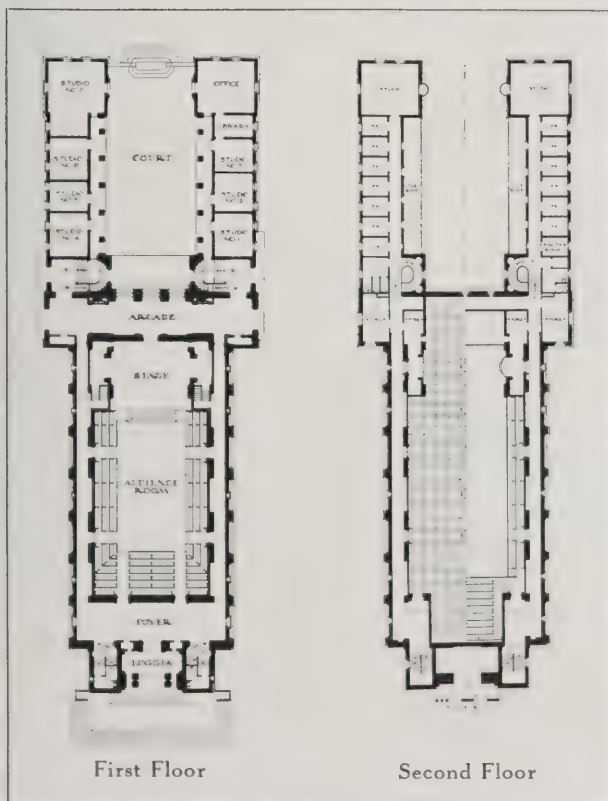
Special forms of apparatus too numerous to mention, such as motor generators, water stills, etc., may be required, but each special problem will develop its demands. Supply pipes should be generously supplied with valves, so that repairs may be easily made and should be painted distinctive colors throughout. All metalwork should be coated with protective paints. In general, simplicity and permanence are to be sought after, and careful use of only the best material should be made, as the original expense in the installation of materials such as chemical-proof waste lines, brass supplies where useful, heavy fittings, etc., is soon made up for by no need of costly repairs which otherwise might soon have to be made.



Detail, Sterling Chemical Laboratory, Yale University
Delano & Aldrich, Architects



BRIDGES HALL OF MUSIC, POMONA COLLEGE, CLAREMONT, CALIF.
MYRON HUNT, ARCHITECT



ALTHOUGH completed over ten years ago, this combination auditorium and studio building for the use of the Department of Music at Pomona College is one of the finest examples of a dignified and restrained use of Spanish Renaissance architecture in a modern collegiate building. The plan shows a large building containing an audience room and deep stage. At the rear and connecting with it is a two-story studio building having a center court or patio. The solution of this problem of combining a large music hall or auditorium with a studio and practice building is interesting and logical. The side corridors of the auditorium, as well as the rear entrance to the stage, connect directly with a broad arcade which opens into the patio of the studio building, as well as to corner stairways leading to the first and second floors of this structure. The first floor of the studio building contains seven studios and a library. The second floor is divided into 14 small practice rooms and two large studios. These studios are used by the instructors in music, and the practice rooms by the pupils. The close proximity of the auditorium or concert hall to the building where all instruction is given and practicing done, is of great advantage to the students of music, making it possible for them to practice and rehearse on the stage, accustoming them to playing in public, which is found helpful.

FORUM SPECIFICATION AND DATA SHEET—112

Bridges Hall of Music, Pomona College, Claremont, Calif.; Myron Hunt, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Reinforced concrete frame, columns surrounded with clay tile walls; tile webs as stiffeners with a filler wall.

EXTERIOR MATERIALS:

Plaster and artificial stone.

ROOF:

Tile.

WINDOWS:

Wood, double as sound insulation; ventilation entirely artificial.

FLOORS:

Wood.

HEATING:

Steam, from central plant.

PLUMBING:

Enameled fixtures.

ELECTRICAL EQUIPMENT:

Lighting; auditorium lighted indirectly.

INTERIOR MILL WORK:

Birch, stained walnut.

INTERIOR WALL FINISH:

Walnut wainscot; lime plaster on tile; wooden ceiling.

DECORATIVE TREATMENT

Plain walls; heavy dark blue stage and window curtains; saw-surfaced wood ceiling colored with stencils.

COST PER CUBIC FOOT:

17 cents.

DATE OF COMPLETION:

December 25, 1915.

The architecture of the interior of the hall or audience room is as appropriately and effectively carried out in the same Spanish Renaissance style as is the exterior. The ceiling of this room, designed in the Baroque style, is executed in redwood, richly stenciled in blue, green, red and gold. The organ front, high wainscoting, and the galleries with their gilded balusters, exhibit a daring but successful use of color, which combined with the happy proportions of the room itself makes this auditorium one of the most distinctive and beautiful rooms in southern California. The deep and lofty porch gives great

dignity to the main facade and entrance of the building. The consistency in scale and the appropriate character of the architectural ornamentation give real distinction to the design. Typical of Spanish Renaissance architecture, broad unbroken wall surfaces give contrast and emphasis to the architectural detail; and, characteristic of all good architecture, the elevations clearly indicate the interior plan and arrangement. The care and restraint shown in the designs of this hall of music might well be emulated by architects called upon to adapt this type of Spanish architecture to modern American buildings.

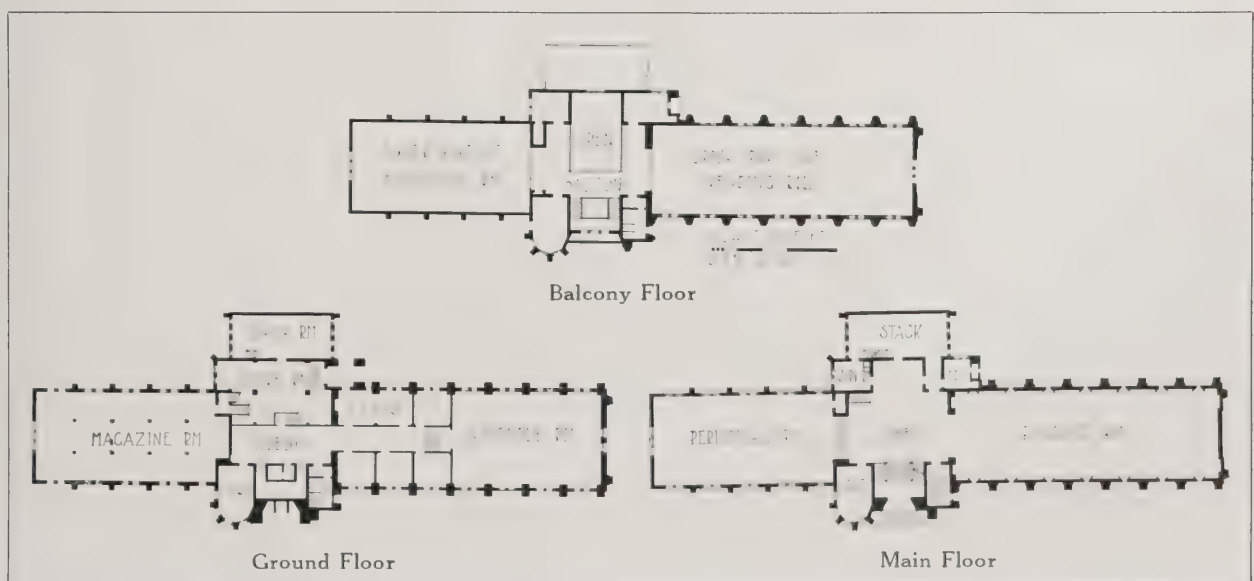


Elevation and Patio, Bridges Hall of Music, Pomona College



Photo. Tebbs & Knell, Inc.

LIBRARY BUILDING, FLORIDA STATE COLLEGE FOR WOMEN, TALLAHASSEE
EDWARDS & SAYWARD, ARCHITECTS



FORUM SPECIFICATION AND DATA SHEET—113

Library Building, Florida State College for Women, Tallahassee; Edwards & Sayward, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Wall-bearing concrete frame.

EXTERIOR MATERIALS:

Brick and limestone.

ROOF:

Tile.

WINDOWS:

Steel.

FLOORS:

Cork and linoleum.

HEATING:

Steam.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

Oak in principal rooms; pine elsewhere.

INTERIOR WALL FINISH:

Plaster, painted.

APPROXIMATE CUBIC FOOTAGE:

520,000.

COST PER CUBIC FOOT:

35 cents.

YEAR OF COMPLETION:

1924.



Interior, Library, Florida State College for Women

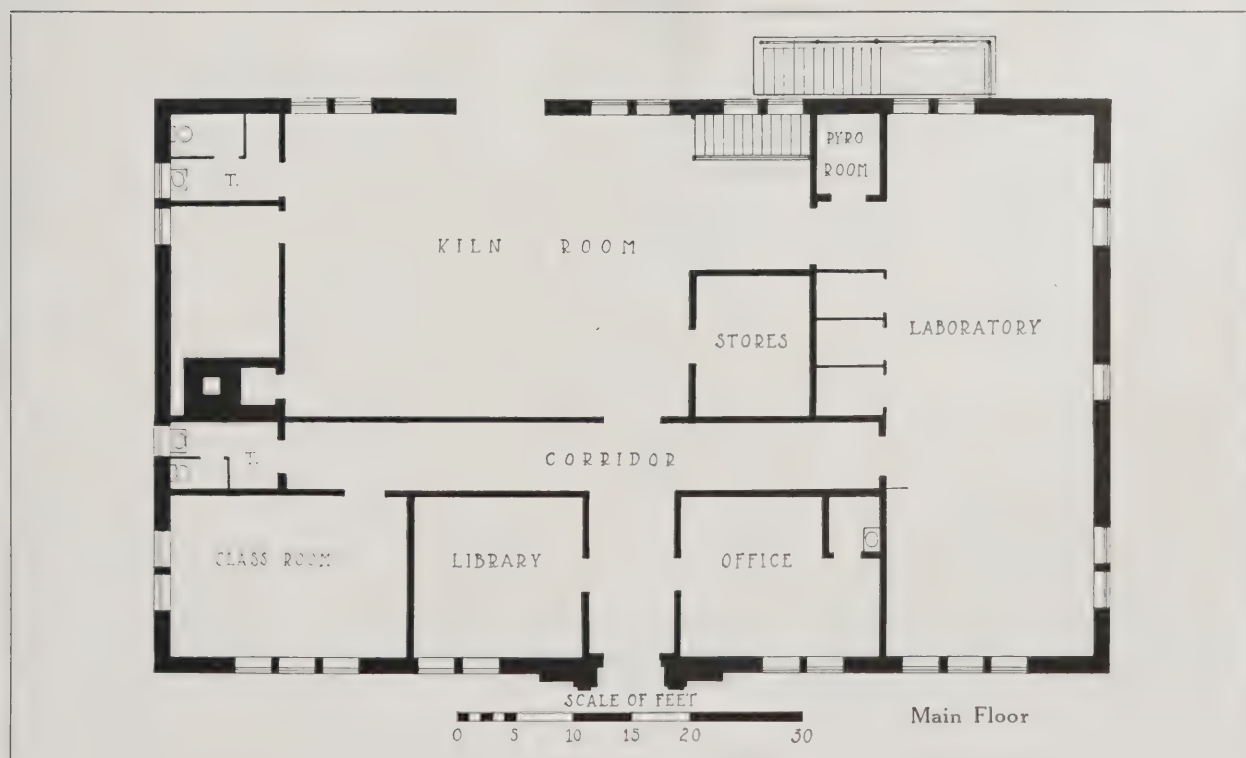
A DIGNITY of design and simplicity and restraint in the use of collegiate Gothic details characterize this building. Use of slightly projecting buttresses between the high windows gives strength and interest to the elevations. The unusually fine quality of the brickwork makes a pleasant contrast to the terra cotta details. Although at present only one wing of the building is completed, it is readily possible to appreciate the character of the library as a whole. The plan provides for a two-story structure with two long wings connected at the center by a high-roofed stack and entrance building, emphasized on the exterior elevation by a low octagonal tower. In the rear of this center portion of the building will be placed a two-story stack room with a librarian's workroom located on one side and his private office on the other. The main reading room, which is yet to be built, will extend from the lobby on one side, and a periodical reading room, already completed and shown in the accompanying illustrations, connects with this lobby on the opposite side. The ground floor plan includes several small consultation and lecture rooms, also an assembly room.



CERAMICS BUILDING, GEORGIA SCHOOL OF TECHNOLOGY, ATLANTA
DESIGNED BY THE FACULTY OF THE DEPARTMENT OF ARCHITECTURE

BUILT to house laboratories and drafting rooms for the study of the manufacturing and designing of ceramics, this building is probably unique. Simple in design, constructed of face brick with terra cotta trimmings, this one-story building shows a double gabled-end roof extending the length of the building. The exterior elevation with its center gable over the recessed entrance door makes a balanced design, grouped windows of the same size filling the wall spaces on either side. The plan shows a library at the left of the entrance hall and an office

at the right. This hall leads into a long corridor running the length of the building, off of which open the large laboratory room across one end of the building, the kiln room at the back, and a classroom on the front. Lockers, closets, toilets and storage rooms occupy the rest of this main floor. The kiln room is provided with two large brick kilns, a long center table for the mixing of clays and cement used in the manufacturing of tile and ceramics, and other apparatus pertaining to this type of work. This room has a tile floor with floor drain, and a 4-foot tile



FORUM SPECIFICATION AND DATA SHEET—114

Ceramics Building, Georgia School of Technology, Atlanta; Designed by Department of Architecture, Georgia School of Technology

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Fireproof; brick and hollow tile.

EXTERIOR MATERIALS:

Face brick; terra cotta trim.

ROOF:

Flat red terra cotta shingles.

WINDOWS:

Double-hung; wood sash.

FLOORS:

Terra cotta tile.

HEATING:

From central power house; special kilns for ceramic firing.

PLUMBING:

Enameled fixtures.

ELECTRICAL EQUIPMENT:

Power outlets for machinery.

INTERIOR MILL WORK:

Yellow pine.

INTERIOR WALL FINISH:

Sand-finished plaster.

DECORATIVE TREATMENT:

Terra cotta tile wainscot.

COMPLETED COST:

Materials donated by manufacturers of ceramic products, so cost cannot be determined.

wainscoting. In one corner a stairway leads to the basement, which, on account of the sharp drop in the grade, is well lighted at the rear and end. The kilns are connected with a single large chimney at the upper end of the building.

Both in design and plan the building is simple and practical. The entrance door is enriched with pilasters and arched pediment which show a logical and pleasing adaptation of Renaissance detail, more English than Colonial in character. In fact the design of the building suggests the period of the early

English Renaissance. Although situated on a steep grade, the building is so located that the level of the first floor is only three low steps above the sidewalk level at the entrance. Narrow windows containing louvers are located in the center of each gable of the roof and serve to ventilate the space between the roof and the ceilings of the rooms below. For its purpose this building is well designed and conveniently planned, showing a successful solution of the problem of designing a small building for a particular type of work which is highly specialized.



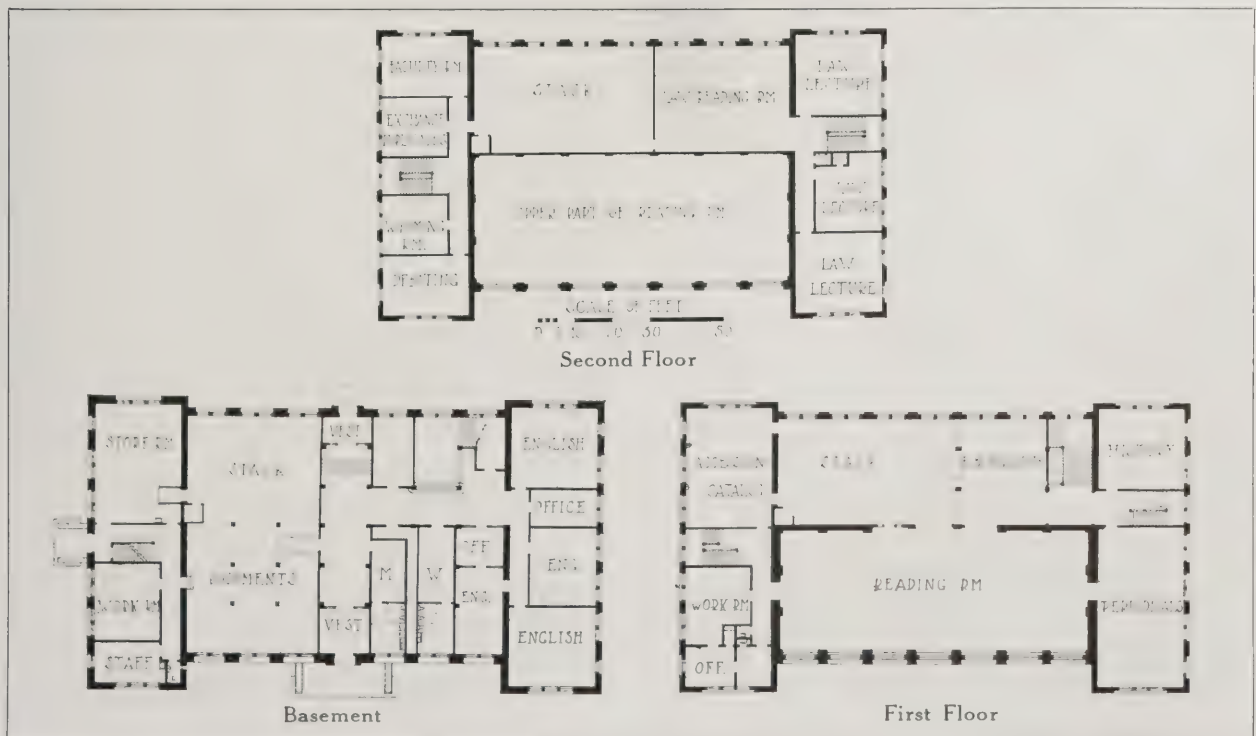
Kiln Room, Ceramics Building, Georgia School of Technology



LIBRARY BUILDING, UNIVERSITY OF WYOMING, LARAMIE
WILBUR A. HITCHCOCK, ARCHITECT

BUILT as it is of brick and limestone, this fireproof library building shows a simple and straightforward design. The rectangular plan is broken by slightly projecting end bays, which add considerably to the interest of the balanced design of the building and assist in indicating the interior plan. Seven large windows, separated by fluted Ionic pilasters, satisfactorily indicate on the front elevation the location of the large reading room which occupies the greater part of the second floor. The grouped windows in the three-story end bays, indicate the loca-

tion of lecture and recitation rooms. The main entrances to the building are at the center of the front and rear elevations on the ground level. A long corridor connects these front and rear entrances. Off of this transverse corridor a side hall opens at right angles, and connects with a wide stairway leading to the first or main floor. In the basement are located several recitation rooms and small offices for the use of instructors, also lavatories for both men and women, and the lower part of the stack room, connected with which is a large space set aside for



FORUM SPECIFICATION AND DATA SHEET—115

Library Building, University of Wyoming, Laramie; Wilbur A. Hitchcock, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Brick walls; buff texture; stone trim; reinforced concrete floors on a steel frame.

STACK CONSTRUCTION:

Cast iron; self-supporting; 6 stories.

ROOF:

Variegated green tile.

WINDOWS:

Double-hung wood sash; steel projected type in reading room and stack room.

FLOORS:

Corridors, ceramic tile; reference rooms and reading room, linoleum; stacks, natural stone; other rooms, concrete.

HEATING:

Vacuum steam; temperature control.

VENTILATION:

Plenum fan.

PLUMBING:

Enameled fixtures; fire protection system.

ELECTRICAL EQUIPMENT:

Lighting, power, and provision for elevator.

INTERIOR MILL WORK:

Red oak; shelving, case, cabinets, etc.

DECORATIVE TREATMENT:

Plaster beams and panels; marble vestibule.

APPROXIMATE CUBIC FOOTAGE: 520,000.

COST PER CUBIC FOOT:

Without fixtures, 28 cents; complete, 34 cents.

YEAR OF COMPLETION: 1923.

the storage of documents. Also placed in the basement are various rooms for the unpacking and shipping of books, and a workroom and office for the librarian and his staff. Connecting with the latter, a separate entrance and stair hall are provided.

The first or main floor plan includes, besides the large reading room, the upper part of the stack, rooms devoted to periodicals, history, recent accessions, the catalog and additional working rooms, and the office for the librarian. These latter rooms are located in the end of the building, above the book receiving and shipping rooms on the ground floor. By

this arrangement all of the rooms pertaining to the librarian's department are grouped together and are adjacent to the main stack room. The third floor has on one end three small lecture rooms used by the Law Department. At the other are located debating, faculty, exchange and the Wyoming rooms. At the back of the building on this floor are the large law reading room and the upper part of the three-story stack. The center portion of the front of this floor is taken up by the upper part of the large two-story reading room. Stairways at either end of the building connect this floor with the floor below.



Entrance Detail



Reading Room



HARPER AND ANNIE KIRBY HALL, SOUTHERN METHODIST COLLEGE, DALLAS
DEWITT & LEMMON, ARCHITECTS

BUILT to house the theological department of the Methodist College at Dallas, the architects have evolved a simple rectangular building, the plainness of which is successfully relieved by the legitimate use of excellent Renaissance details which are sufficiently refined in character to suggest English rather than Colonial precedent. The three stories of all four elevations are broken above the first story by a

broad belt course, which makes possible the use of tall arched windows on the second or main floor. The main facade is effectively broken by a central bay which extends out on the basement story a few inches beyond the face of the main wall. This break is continued up to the top of the building by a series of six pilasters separated by balustrades on the second floor level, suggesting a Colonial portico. Had



FORUM SPECIFICATION AND DATA SHEET—116

Harper and Annie Kirby Hall, Southern Methodist College, Dallas; Dewitt & Lemmon, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Reinforced concrete; tile partitions.

EXTERIOR MATERIALS:

Brick; limestone trim.

ROOF:

Slate.

WINDOWS:

Double-hung; wood frames and sash.

FLOORS:

Terrazzo for stairs, corridors and toilets; edge grain pine for classrooms; oak for library.

HEATING:

Steam.

INTERIOR MILL WORK:

Birch.

INTERIOR WALL FINISH:

Smooth plaster, painted.

DECORATIVE TREATMENT:

Wood trim, stained.

APPROXIMATE CUBIC FOOTAGE:

328,500.

COST PER CUBIC FOOT:

38 cents.

YEAR OF COMPLETION:

1924.

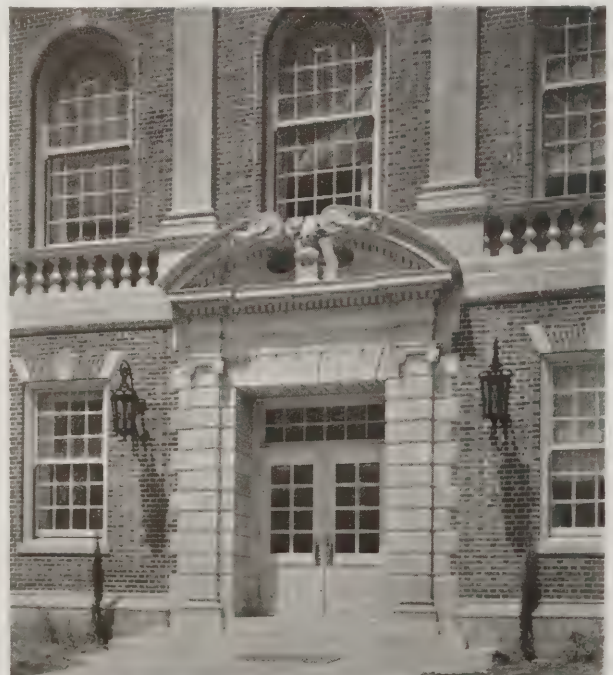
it been possible to carry the frieze course of this entablature around the entire structure, considerable dignity and weight would have been added to the top of the building between the flat arches of the third story windows and the main cornice. Could the main cornice of the building have been broken out over the entablature above the pilasters, a pleasing and consistent break in the long, unbroken line of the main cornice would have been achieved. The detail of the main entrance door with its heavy rustication and broken pediment again suggests English Renaissance rather than Colonial precedent. The balcony and window above each of the end entrances of the building show refinement of detail and appreciation of scale as well as due regard for precedent.

The plan is splendidly balanced and logically ar-

ranged. The first floor shows large study halls on each side of the main entrance, back of which a long corridor extends from one end of the building to the other. On the rear of this floor a broad stairway leads up to the landing connecting with a rear entrance door, and continues on to the second floor. Classrooms, offices, locker rooms and toilets occupy the main space on this floor. The plan of the second floor shows a like consideration for balance and conservation of space. At either end of this floor are large rooms extending the entire width of the building, one of which is used as a chapel and the other as a library. The space in the center section of this floor is taken up with the main stairway, the corridor connecting the chapel and library, and rooms used by the various officers of the theological school.



End Elevation



Detail, Entrance

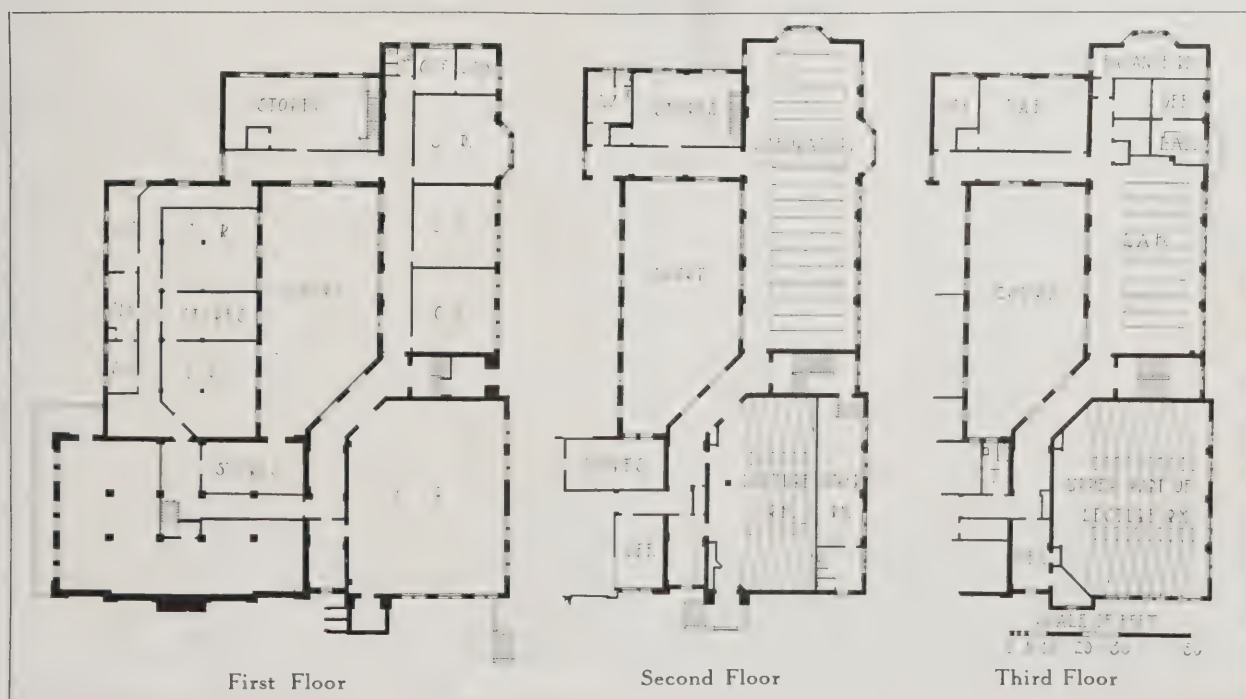


Photo. Tebbs & Knell, Inc.

CHEMISTRY BUILDING, GEORGIA SCHOOL OF TECHNOLOGY, ATLANTA
PRINGLE & SMITH, ARCHITECTS

SLOW-BURNING construction with red brick and limestone trimming was used in this recently completed chemistry building for the Georgia School of Technology. The exterior design shows a pleasing simplicity appropriate to a practical recitation and laboratory building of this character. The grouped windows, gabled bays, and the character of the detail suggest the early English Renaissance as the precedent used in the design. The only orna-

mental detail used is at the entrance doors, where low balustrades, arched openings and open pediments supported on richly carved brackets provide pleasing notes of interest, breaking the otherwise severe character of the exterior design. The practical and utilitarian purpose of this building is successfully evidenced. Three stories in height, the second floor contains, for the convenience of the freshman class, a long laboratory, provided with nine tables for exper-



FORUM SPECIFICATION AND DATA SHEET—117

Chemistry Building, Georgia School of Technology, Atlanta; Pringle & Smith, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Brick bearing walls; concrete footings; wood joists; steel girders.

EXTERIOR MATERIALS:

Face brick; limestone trim.

ROOF:

Slate.

WINDOWS:

Steel sash.

FLOORS:

Oak.

HEATING:

Steam from central power plant.

PLUMBING:

Enameled fixtures.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

Birch.

INTERIOR WALL FINISH:

Hard plaster.

APPROXIMATE CUBIC FOOTAGE:

290,000.

COMPLETED COST:

\$94,500, exclusive of equipment.

DATE OF COMPLETION:

August, 1925.

imental use. In the rear of this laboratory is an open court, 32 feet wide, which separates the new chemistry building from the original building in the rear. Part of the problem the architects were called upon to solve was to plan the new structure so as to connect with and form a part of the original chem-

istry building. This has been successfully achieved by the use of corridors and connecting doors on each floor at either end of the building, and the structure in its present form is well adapted to its purpose.

Besides the long freshman laboratory together with stock room and corridors, the second floor contains

a large lecture room, extending up two stories. Under the steep sloping tiers of the seats, in this lecture room, are a large locker room and toilets for men, which connect with the center stair hall and rear entrance. The third floor contains the upper part of the lecture room, a quantitative laboratory and several rooms for instructors, records, instruments and apparatus. A smaller quantitative laboratory and office are located in the wing which connects the new building with the older structure in the rear. The ground floor, which is sufficiently high above grade to have excellent light, contains a large organic laboratory, several classrooms and store rooms, and individual laboratories and offices for the instructors.

Although the plan as a whole is irregular, the space is economically divided and conveniently arranged. The style of architecture used in this chemistry building differs from that of the original structure in the rear, but it is sufficiently simple and inconspicuous in character to make it a suitable and unobtrusive screen to the older building of several decades ago which is located behind it. The building, the old portion as well as the new, is well lighted, a detail which while highly important in any structure is absolutely necessary in a laboratory of this nature.



Entrance, Chemistry Building, Georgia School of Technology

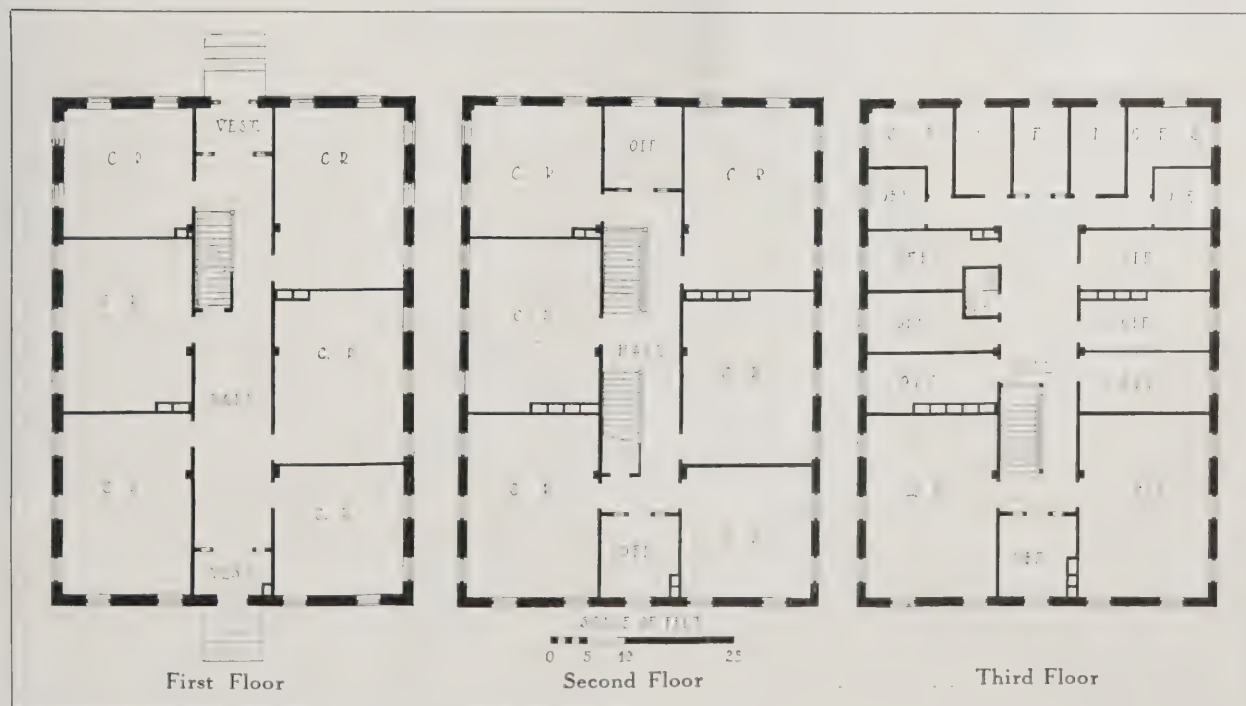


Photo. Paul J. Weber

THORNTON HALL, DARTMOUTH COLLEGE, HANOVER, N. H.
LARSON & WELLS, ARCHITECTS

ALTHOUGH the exterior walls of this building probably date back to between 1830 and 1840, the restorations and alterations completed two years ago have made of this old lecture hall a completely

modern and up-to-date structure, conveniently and economically planned. The exterior brick walls and all of the wood window sashes are painted white, in pleasant contrast to the green painted blinds used on



FORUM SPECIFICATION AND DATA SHEET—118

Thornton Hall, Dartmouth College, Hanover, N. H.; Larson & Wells, Architects

OUTLINE SPECIFICATIONS

EXTERIOR MATERIALS:

Brick, painted; stone trim.

WINDOWS:

Double-hung, wood.

FLOORS:

Composition throughout.

HEATING:

Steam.

PLUMBING:

Enameled fixtures.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

Red oak.

INTERIOR WALL FINISH:

Hard plaster, painted; partitions, terra cotta tile.

APPROXIMATE CUBIC FOOTAGE:

121,300.

COST PER CUBIC FOOT:

45.8 cents.

YEAR OF COMPLETION:

1924.



Entrance, Thornton Hall, Dartmouth College

the windows and the dark gray weather-stained granite of the door and window trim. The original roof lines, with pedimented gable ends, were left as first built, but the cornice was reconstructed in keeping with the period of the building. It is gratifying to find an alteration to an old structure so carefully and conscientiously carried out. In every detail the character of the original building has been preserved and, where necessary, it has been carefully restored to its original state.

The first floor plan shows a wide corridor extending the length of the building, with entrance doors and vestibules at each end. These vestibules are of great advantage during the severe winter months, when it is important to conserve the heat in the building. A wide staircase in this entrance hall connects with the two upper floors. On this first floor are located six classrooms, varying slightly in size. The second floor also has six classrooms and two offices for professors or instructors, which are located at either end of the broad center hall. On the third floor, in addition to two large classrooms, there are also 14 small offices for the use of professors and other instructors.



Photo, Ogden Studio

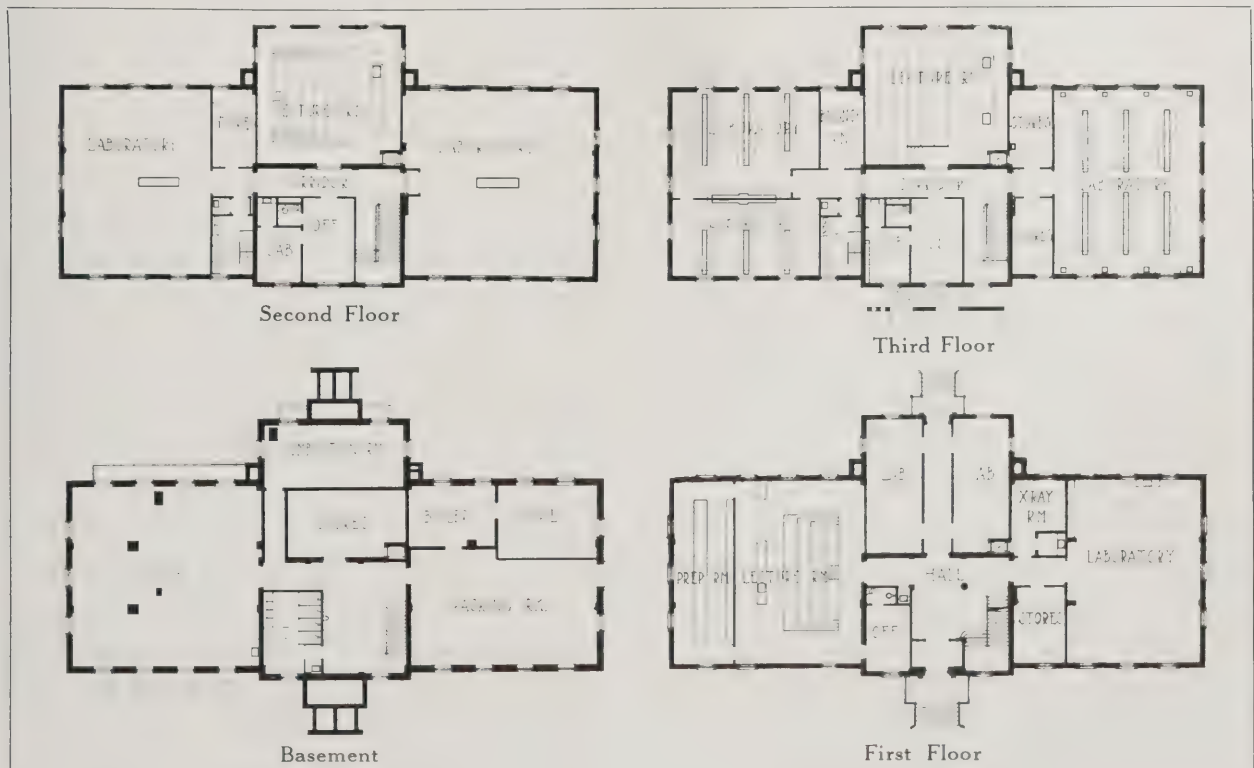
SCIENCE BUILDING, HAMPDEN-SIDNEY COLLEGE, VA.

VISSCHER & BURLEY, ARCHITECTS

REMINISCENT of the old Colonial dormitory buildings such as Holworthy and Stoughton Halls at Harvard, this Science Building is appropriately and consistently designed for its location in the "Old Dominion." Completed just a year ago, the illustrations show the need of shrubbery about the building and vines upon it to soften the evidences of

recent construction which are so obvious to the eye.

Rectangular in plan, center bays break the front and rear elevations. The bay on the rear projects only slightly from the line of the main walls, while that on the front breaks out about 13 feet. These projecting center bays are terminated in typical Colonial style with cornices and pediments. Round



FORUM SPECIFICATION AND DATA SHEET—119

Science Building, Hampden-Sidney College, Va.; Visscher & Burley, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Brick and reinforced concrete.

EXTERIOR MATERIALS:

Brick and marble.

ROOF:

Slate.

WINDOWS:

Wood and steel.

FLOORS:

Maple.

HEATING:

Steam.

PLUMBING:

Brass pipe for water; extra heavy for coils.

ELECTRICAL EQUIPMENT:

Lighting.

INTERIOR MILL WORK:

Oak.

INTERIOR WALL FINISH:

Plaster.

DECORATIVE TREATMENT:

Walls and ceilings painted.

DATE OF COMPLETION:

June, 1925.

windows, appropriate to the style, break the centers of these pediments. The refined detail of the front and rear entrance doors, the careful spacing and proportions of the windows, and the uniform scale of the window panes all contribute to the consistent Colonial character of the design. Two slender chimneys occupy the angles formed by the projection of the center bay from the main building on the entrance front. Although this location of chimneys is unusual in Colonial design, in this case it makes a pleasant vertical break in the long horizontal lines of the roof and cornice. A small octagonal lantern or cupola successfully crowns the roof and does away with the otherwise dormitory character of the design.

The building is conveniently and economically planned for the purpose of its use as a Hall of Science. On the first floor a corridor connects the front and rear entrances, on either side of which are small laboratories, an office and stairway. At one end of this floor is located a large lecture room, back

of which is an apparatus room, while at the other are located X-Ray and storage rooms and a large junior laboratory extending from the front to the rear of the building. The plan of the second floor includes two large biology laboratories, each of which occupies an entire end of the building, store and toilet rooms, an office and small private laboratory and a large lecture room. The third or top floor also has a large laboratory occupying each end of the building, with stock rooms, a balance room and toilets connecting. The center portion of this floor is occupied by a third lecture room, located at the front of the building, and an additional office and private laboratory on the rear. The exterior elevations of this building do not definitely indicate the interior plan, yet through the consistent and successful manner in which Colonial precedent has been followed this structure is an excellent example of the use of the Colonial style in a practical and modern college building. It fits admirably its place on the campus.



Science Building, Hampden-Sidney College, Va.

The College Administration Building

By JOHN GALEN HOWARD

Director of the School of Architecture, University of California

ONE of the most definite and agreeable impressions one has, on looking over the field of recent college architecture on the Pacific Coast, is of the seeming consensus of feeling among architects as to the determining influence of climatic and landscape conditions upon the character of design. One might perhaps have expected to find a closer approximation to a given type imposed somewhat arbitrarily over the whole region as especially collegiate in present-day connotation, without much differentiation on account of climate, which differs far less as between Seattle and Los Angeles than it does between Maine and Florida, or between Chicago and New Orleans. The fairly consistent leaning, therefore, toward northern inspiration such as English Tudor or New England Colonial in the Washington and Oregon work, and toward southern—Spanish, or Mediterranean Romanesque or modified Classic—in California, may be taken as indicating a high degree of artistic sensitiveness to influences which were, to be sure, always accepted more or less unconsciously as basic in the good old times when the styles we recognize as such were being formed, but which have seemed to be largely relegated to the attic in these latter centuries. We have become so used, in fact, to seeing southern forms,—Italian and Greek, for instance,—applied with little or no modification to northern requirements that we do not turn a hair at a Classic pediment in Leningrad or Montreal, any more than we probably should at a steep-roofed Norwegian chalet in the Everglades, if that happened to be the fashion in vogue in the centers where fashions are decided. All the more credit, then, to the architects of the “Coast” that they feel and accept and act sincerely on the impalpable subtleties which, without your reading print, make you aware when you are in Tacoma that you aren’t in San Diego, and when you are on the banks of the Colorado that you aren’t on Puget Sound. And all the better, too, that you are thus orientated by the architecture as well as by considerations which should make and are making the architecture what it is. All this promotes consistency in architecture.

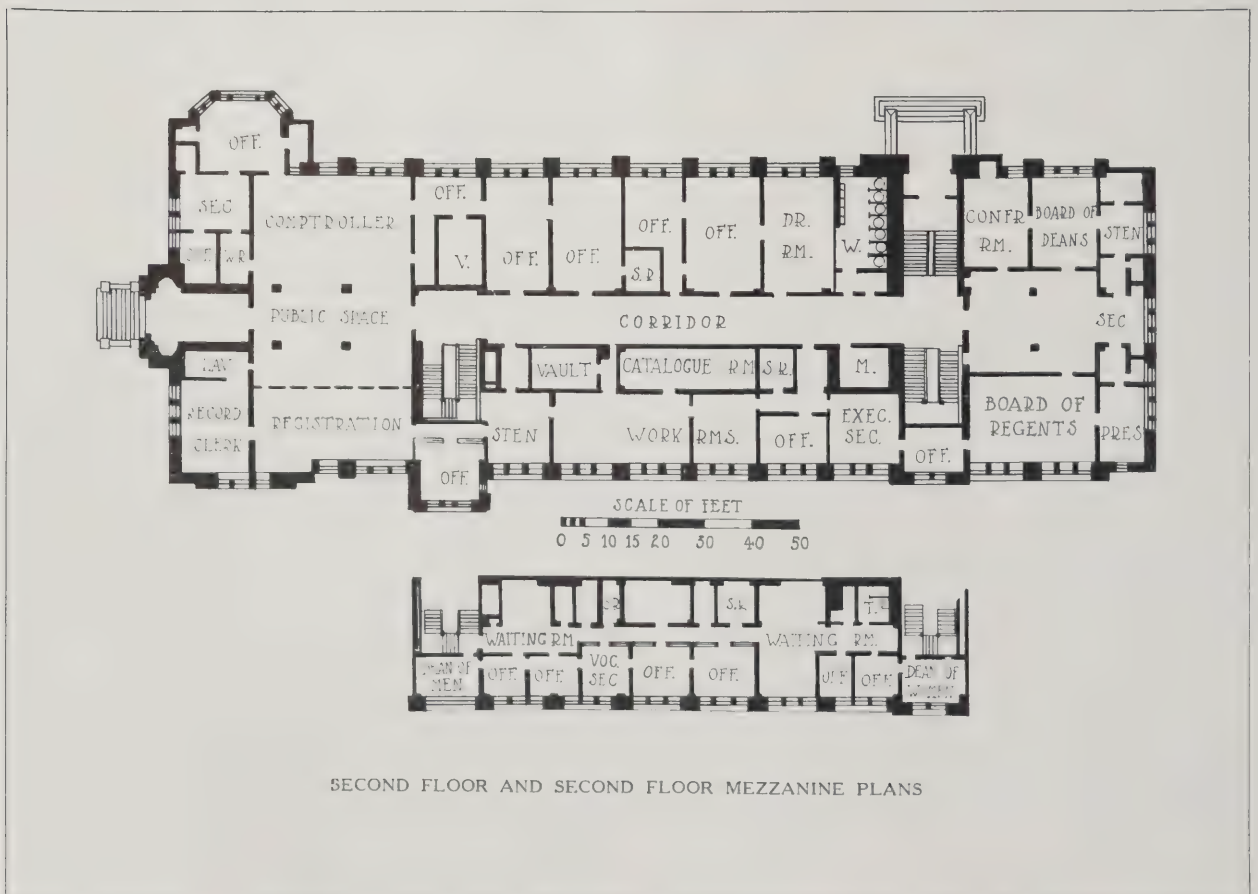
There has been, particularly on the “Coast,” a very considerable amount of college building within recent decades, and of a high order of merit, whatever kinds of criteria are set up, whether of regional character, æsthetic charm, or collegiate appropriateness,—and much more has been planned than has, as yet, been built. I wish the limits of this paper would permit the presentation of some of the exceedingly interesting and, several of them, very extended projects which give evidence of the confident expectations of these communities and promise to keep the architects busy for many a year to come. But I must confine myself pretty closely to a specific phase of

the general subject. Even with that in view I must premise that in many, and in fact most, cases the administrative building of the group, strictly speaking, has not yet materialized, at any rate in its fully developed shape. Eventual plans look to the requirements of a far larger enrollment than what is had at present, and meantime the needs of instruction are the most pressing. As a result, the administration is frequently taken care of provisionally in a building whence it has from the first been the idea that it will later migrate to a building of its own to make room for more classrooms where it now is. In other cases a given part of a building—say a story—has been planned on what was at the time thought to be an adequate scale for future needs, only to have enrollment so increase as to necessitate the turning over of the whole building to administration. The difficulty, the adventure, and the tantalizing opportunity of the situation are illustrated by what has been said,—everything is planned optimistically for a great development,—and the development has come so rapidly and in so much greater measure than has been anticipated that accommodation is always behind requirements.

The University of Washington, at Seattle, proposes ultimately to erect a building for administration exclusively as part of a separate quadrangle with the library, law building, auditorium and museum as indicated in the group plan by Bebb & Gould, architects, shown on page 362. The irregularities of the arrangement are due both to natural configuration of the ground and to its relation to the first university buildings, erected years ago and already “old” in this new country, and also to the layout of the Alaska-Yukon-Pacific Exposition, which at one time occupied the site and which, though now no longer standing, established certain axes and communications. The architects’ skillful adjustment of the various elements has resulted in a most unusual and interesting scheme, in which charm and variety result from the irregular shapes of the buildings without any loss of convenience or dignity. The fortunate choice of a modified and adapted architectural form of the Tudor type will lend itself admirably to just such free development as is here foreshadowed. For the present the administration occupies the ground floor and a partial mezzanine floor of the Education Hall, the upper two stories containing classrooms. Eventually the ground floor also will be remodeled for classrooms, but for the present this story has been subdivided so as to present a fairly typical plan for the administration offices of a state university on a considerable scale as to size, but modest as compared with what will in time be the reasonably expected growth of the university, say 10 or 15 years from now. The building erected

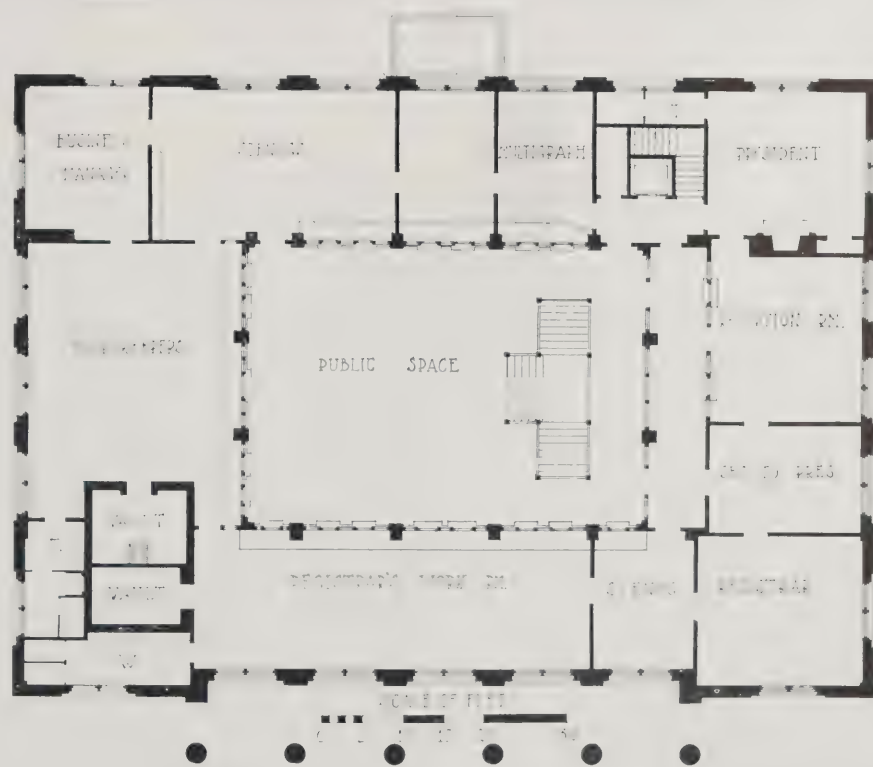


EDUCATION HALL, UNIVERSITY OF WASHINGTON, SEATTLE
BEBB & GOULD, ARCHITECTS





WOMEN'S BUILDING, UNIVERSITY OF OREGON, EUGENE
LAWRENCE & HOLFORD, ARCHITECTS



SECOND FLOOR PLAN, ADMINISTRATION BUILDING
UNIVERSITY OF OREGON, EUGENE
W. C. KNIGHTON, ARCHITECT



Tower Entrance, Jones Hall, College of Puget Sound

by Bebb & Gould, architects, within the last three years, is 229 feet long by 70 feet wide, entirely fire-proof, the structural frame, floors and roof slabs being of reinforced concrete with exterior of brick and terra cotta, and rather steep slate roofs. The clue to the plan, which makes it easily readable on paper and

conveniently workable in execution, lies in the *parti* of two centers: (a) the high administrative and academic center at one end, with the regents, president and deans grouped around the secretary; and (b) the business and registration center at the other end, with the comptroller and recorder symmetrically located on either side of a large public space, (with special entrance) somewhat like a bank arrangement. Between these two centers, on both sides of the connecting corridor, are suites of offices in logical interrelation, for assistant comptroller, bookkeeper, purchasing agent, superintendent of buildings and grounds and drafting, on the comptroller's side; and registrar, record clerk, workrooms, and executive secretary, on the recorder's side. Over a part of these latter rooms is a mezzanine story accommodating the dean of men at one end of the series and the dean of women at the other, each with a spacious waiting room and a suite of subsidiary offices for vocational secretaries, conference, examination, storage, filing, etc. The whole arrangement is exceedingly well thought out, embodying as it does the accumulated experience of many similar institutions, and itself doubtless, destined to contribute largely to the progressive solution of the type problem.

At the College of Puget Sound, in Tacoma, the administration is housed in Jones Hall, (the first of a large proposed group,) erected in 1923-4 by Sutton, Whitney & Dugan, architects. Here, as with most of its fellows on this coast, administration and instruction are under one roof, without inconvenience, as enrollment is still comparatively small. The building is 270 feet long by 57 feet wide, mostly with reinforced concrete walls with kiln-run brick and stone veneer and steep tile roof. The design is simple and straightforward, agreeably recalling in a



Jones Hall, College of Puget Sound, Tacoma
Sutton, Whitney & Dugan, Architects

way, with its central tower, oriels and mullioned windows, an English school of similar capacity and requirements. Its very simplicity, in fact, is admirable.

Reed College, at Portland, is still in its comparatively early formative stage architecturally, and administration shares with library and classes the fine main building by A. E. Doyle, architect. The Tudor note here is more definitely struck than in the preceding instance, and the scholarly study of brick and stone, in rhythmic dignity and balance, gives a vigorous, monumental quality to the design. The detail has been worked out with great care and consistency, and new as the structure is, it possesses much of the charm and architectural character of the English prototypes from which its inspiration was derived.

The Administration Building at the University of Oregon, at Eugene, built in 1915, is by W. C. Knighton, architect. The basement and ground floor are assigned to various academic uses, the administrative offices occupying the entire second story. The *parti* of the plan is a large central open space, like a covered court, some 34 feet by 48 feet in dimensions, lighted from above and surrounded by a sequence of offices,—president, reception room, secretary, registrar's workroom, bookkeepers, business manager, stenographers, etc. The central court, or public space, is approached from the lower story by a wide double staircase which comes up directly into the court near the side on which the reception room and president's office are located. The other three sides of the court open by wickets in a glazed partition, banking room fashion, into the registrar's workroom, bookkeepers' room, etc. Present registration is about 4,000 students. The building measures 105 feet by 76 feet, and is built of reinforced concrete and steel, with red pressed brick and terra cotta exterior. It is of a



Library Entrance, Administration Building, Reed College

modified Classic style, with flat roof, and the main architectural feature is a two-story entrance portico of six Ionic columns with entablature and parapet.

In this connection I cannot resist the temptation to stretch a point and include a word of mention of the more recent work at the University of Oregon



Administration Building, Reed College, Portland, Ore.

A. E. Doyle, Architect



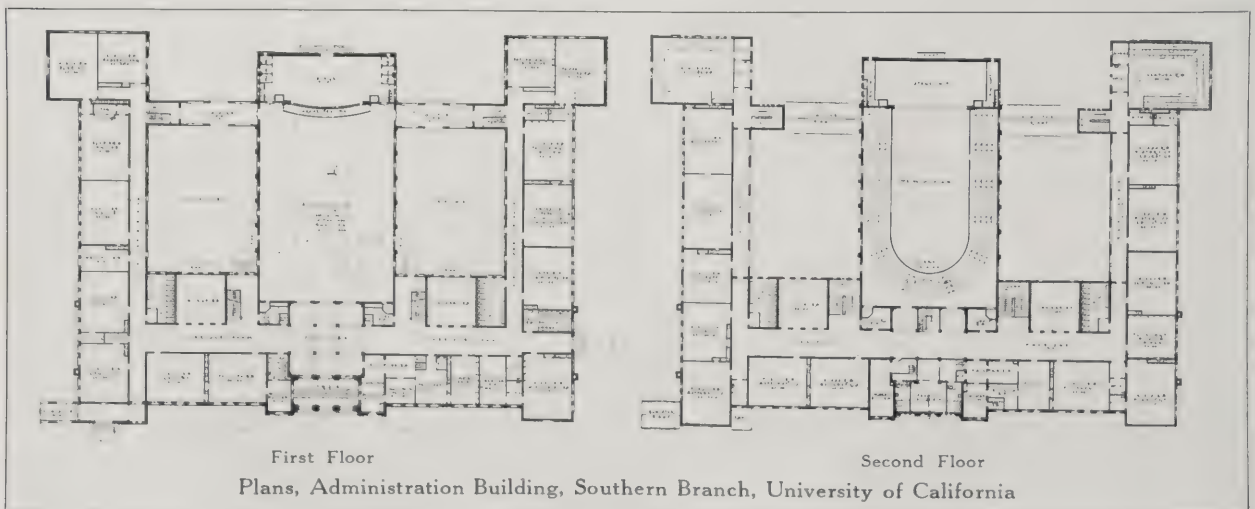
Administration Building, University of California (Southern Branch), Los Angeles

Allison & Allison, Architects

by Lawrence & Holford, architects. In the Women's Building a new note has been struck,—Georgian shall we call it?—or Colonial? Perhaps its rare charm comes, not from remote suggestions of this or that English or New England prototype so much as from its truly indigenous character. It seems to belong just where it is, racy of the soil, and ready to play the friendly game with other buildings which in the future may prefer to lean more definitely in one or another direction, whether more punctiliously stylistic, or more eliminative of identifiable allusion or derivation, as for instance in the flat-roofed School of Commerce, by the same architects.

At the University of California, Berkeley, the first building of the Phoebe Apperson Hearst Plan to be completed and occupied, California Hall, designed by me, is on a program about equally divided between

administration and instruction, the first story originally containing only classrooms, and the second story only administration. Since 1905, when the building was first occupied, the enrollment of the University has so increased, and with it the needs of the administration, and at the same time instruction has been so far taken care of in other newer buildings, that all of California Hall has been given over to administration except one large lecture room on the ground floor. And several departments of administration are provided for elsewhere. The scheme of the plan of the second floor is motivated on a covered central court, 28 feet wide by 134 feet long, lighted from above, upon which open, with wickets and counters, banking room fashion, a series of offices. This motive was based on the need, at frequent intervals, of space extensive enough to accom-





California Hall, University of California, Berkeley
John Galen Howard, Architect

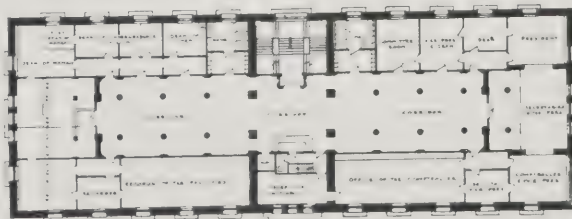
moderate large bodies of students, in line, for purposes of registration, the payment of fees and the like. Enrollment, however, has long ago grown so beyond all calculation that these functions on great days are now accommodated in the open air, weather permitting (which it always does in August, at the beginning of the college year), or in case of rain in the Men's Gymnasium, this being the only covered space on the campus large enough to serve an appreciable portion of the crowd,—upwards of 10,000, campus registration. The throngs even on minor occasions, however, amply justify the large space, around which are grouped in logical sequence the president, vice-presidents, deans, secretaries, comptroller, recorder, examiners, dean of women, dean of men, and dean of the undergraduate division. On the ground floor are the dean of the College of Letters and Science, the dean of the summer session, the dean of the graduate division, the accounting department and the purchasing agent. The entire attic, originally planned for storage only, is now occupied by offices and working space largely devoted to the summer session.

Other important elements of the administrative program, which have had to be housed elsewhere, are the regents' rooms in San Francisco, the faculty room in Wheeler Hall, the superintendent of grounds and buildings in a temporary building on the campus, etc. California Hall is 200 feet long by 70 feet wide, of fireproof construction, brick, concrete and steel, with granite exterior, and a roof of tile, copper and glass. In style the building is a free study of modified Classic forms, without recourse to the use of the (to the designer's view) much over-used, and in fact much abused, columnar orders. An attempt has been made to realize in this building a type of architecture essentially characteristic of central California. It would be interesting to show something of Leland Stanford University, but I am informed that the administrative offices there are at present housed (only provisionally) in an old building originally designed for other and quite different purposes.

In southern California there are a number of most interesting college groups which well repay careful study both as to plan and as to general architectural



First Floor



Second Floor

Plans, California Hall, University of California, Berkeley

character of design. Among these appreciative mention must be made of the buildings, in Los Angeles, originally erected for the Los Angeles State Normal School, but now occupied by the Southern Branch of the University of California, of which Allison & Allison were the architects. In this group administration is housed in the same building with the chief auditorium and other departments of instruction. All the buildings are of brick sparingly trimmed with buff stone, and with low-pitched tile roofs. The fresh, unaffected style is felt to "belong," indigenous and free from archæological preoccupation, though clearly inspired by the enchanting masterpieces of Romanesque and Byzantine architectural schools.

Another beautifully characteristic work in Los Angeles is at Occidental College, by Myron Hunt, architect. As almost everywhere else, administration occupies at present only a comparatively small part of one of the classroom buildings. The plan is eventually to erect an administration building at the head of the main axis of the composition, a fine dominating position raised well above the level of the rest of the group. Conceived in a generally Classic mode, the detail and the massing of these structures have



Johnson Hall, Occidental College, Los Angeles
Myron Hunt, Architect

been studied with a delicacy, freedom and grace which do away with anything like the coldness which is sometimes associated with the idea of Classic architecture. The buildings step up naturally on the terraced slopes, and, with their loggias and overhanging eaves, introduce a suggestion of romance which is most appropriate. The roofs are low in pitch, covered with Spanish tile; the exteriors are of uniform soft gray stucco. Everything is fireproof except the sloping roof structure, which is built up over the concrete ceiling slab of the upper story and is allowed to appear in parts as deep colored overhanging eaves of wood.

Pomona College, at Clare-

mont, has also used stucco finish for the exterior.

As I have thus rapidly (too rapidly, I fully realize) traversed the coastal territory between the Canadian and the Mexican borders, I feel again, as at the start of this brief aeroplane flight, that I have been privileged to observe a genuine response on the part of a notable number of architects, to just the sort of varying conditions which in the past have brought about regional styles or sub-styles, and which there is every reason to believe may do so again in the near future on this edge of occidental civilization.



Administration Building (Southern Branch),
University of California



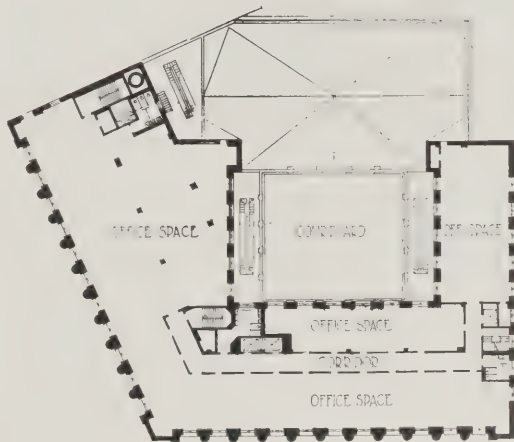
University of Southern California
John and Donald B. Parkinson, Architects



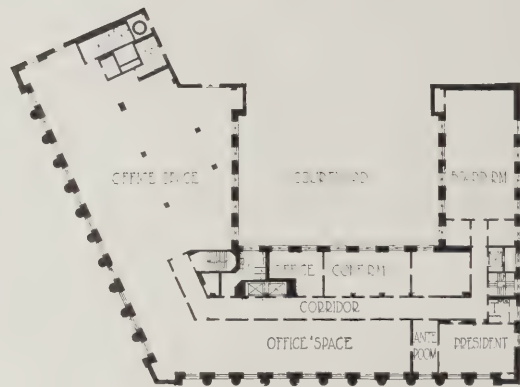
Photos, John Wallace Gillies

UNITED STATES CHAMBER OF COMMERCE, WASHINGTON
CASS GILBERT, ARCHITECT

Plans on Back



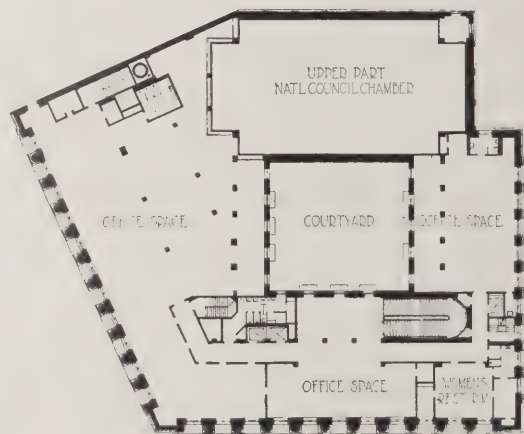
THIRD FLOOR



FOURTH FLOOR



FIRST FLOOR



SECOND FLOOR

UNITED STATES CHAMBER OF COMMERCE, WASHINGTON
CASS GILBERT, ARCHITECT



DETAIL, MAIN ENTRANCE
UNITED STATES CHAMBER OF COMMERCE, WASHINGTON
CASS GILBERT, ARCHITECT



DETAIL, COURTYARD
UNITED STATES CHAMBER OF COMMERCE, WASHINGTON
CASS GILBERT, ARCHITECT



DETAIL, VESTIBULE
UNITED STATES CHAMBER OF COMMERCE, WASHINGTON
CASS GILBERT, ARCHITECT



DETAIL, VESTIBULE
UNITED STATES CHAMBER OF COMMERCE, WASHINGTON
CASS GILBERT, ARCHITECT



DETAIL, STAIR HALL
UNITED STATES CHAMBER OF COMMERCE, WASHINGTON
CASS GILBERT, ARCHITECT



NATIONAL COUNCIL CHAMBER
UNITED STATES CHAMBER OF COMMERCE, WASHINGTON
CASS GILBERT, ARCHITECT



RECEPTION ROOM



BOARD ROOM

UNITED STATES CHAMBER OF COMMERCE, WASHINGTON
CASS GILBERT, ARCHITECT



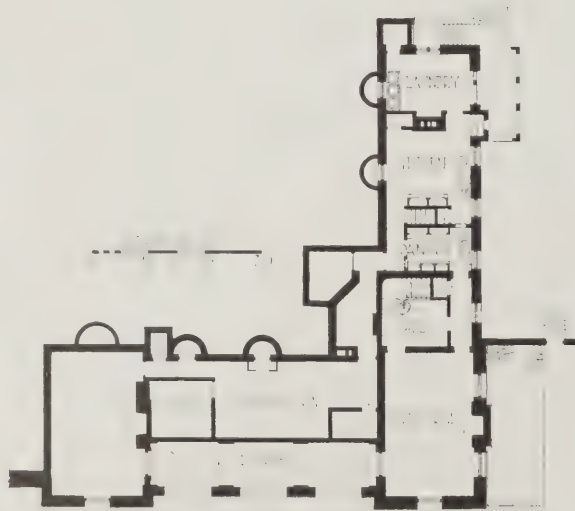
Photos. George H. Van Anda

HOUSE OF PHILIP H. GOODWIN, ESQ., SYOSSET, N. Y.
PHILIP H. GOODWIN, ARCHITECT

Plans on Back



SECOND FLOOR



BASEMENT



FIRST FLOOR

PLANS, HOUSE OF PHILIP H. GOODWIN, ESQ., SYOSSET, N. Y.

PHILIP H. GOODWIN, ARCHITECT



LAWN FRONT, HOUSE OF PHILIP H. GOODWIN, ESQ., SYOSSET, N. Y.
PHILIP H. GOODWIN, ARCHITECT



DETAIL, HOUSE OF PHILIP H. GOODWIN, ESQ., SYOSSET, N. Y.
PHILIP H. GOODWIN, ARCHITECT



TERRACE, HOUSE OF PHILIP H. GOODWIN, ESQ., SYOSSET, N. Y.

PHILIP H. GOODWIN, ARCHITECT



DETAIL, "BIG ROOM," HOUSE OF PHILIP H. GOODWIN, ESQ., SYOSSET, N. Y.
PHILIP H. GOODWIN, ARCHITECT



DETAIL, "BIG ROOM," HOUSE OF PHILIP H. GOODWIN, ESQ., SYOSSET, N. Y.
PHILIP H. GOODWIN, ARCHITECT



DETAIL, "BOOK ROOM," HOUSE OF PHILIP H. GOODWIN, ESQ., SYOSSET, N. Y.
PHILIP H. GOODWIN, ARCHITECT



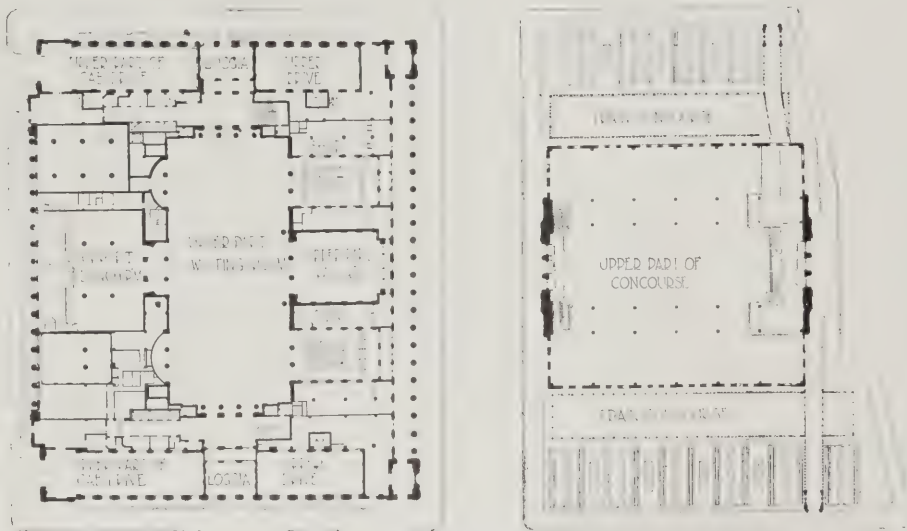
ENTRANCE HALL, HOUSE OF PHILIP H. GOODWIN, ESQ., SYOSSET, N. Y.
PHILIP H. GOODWIN, ARCHITECT



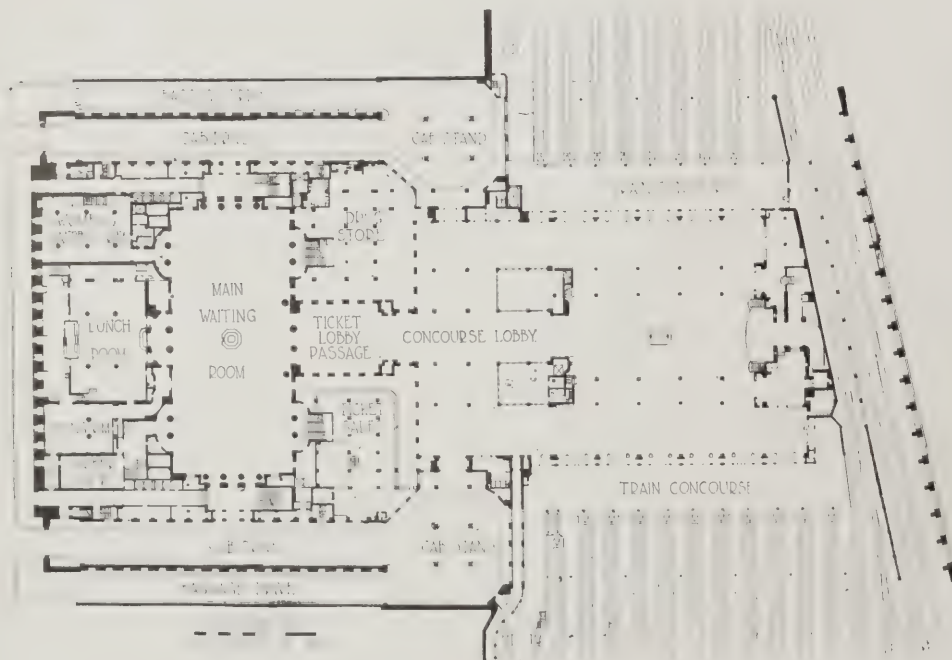
Plans on Back

GENERAL VIEW
CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS

Photos. Tobbs & Knell, Inc.



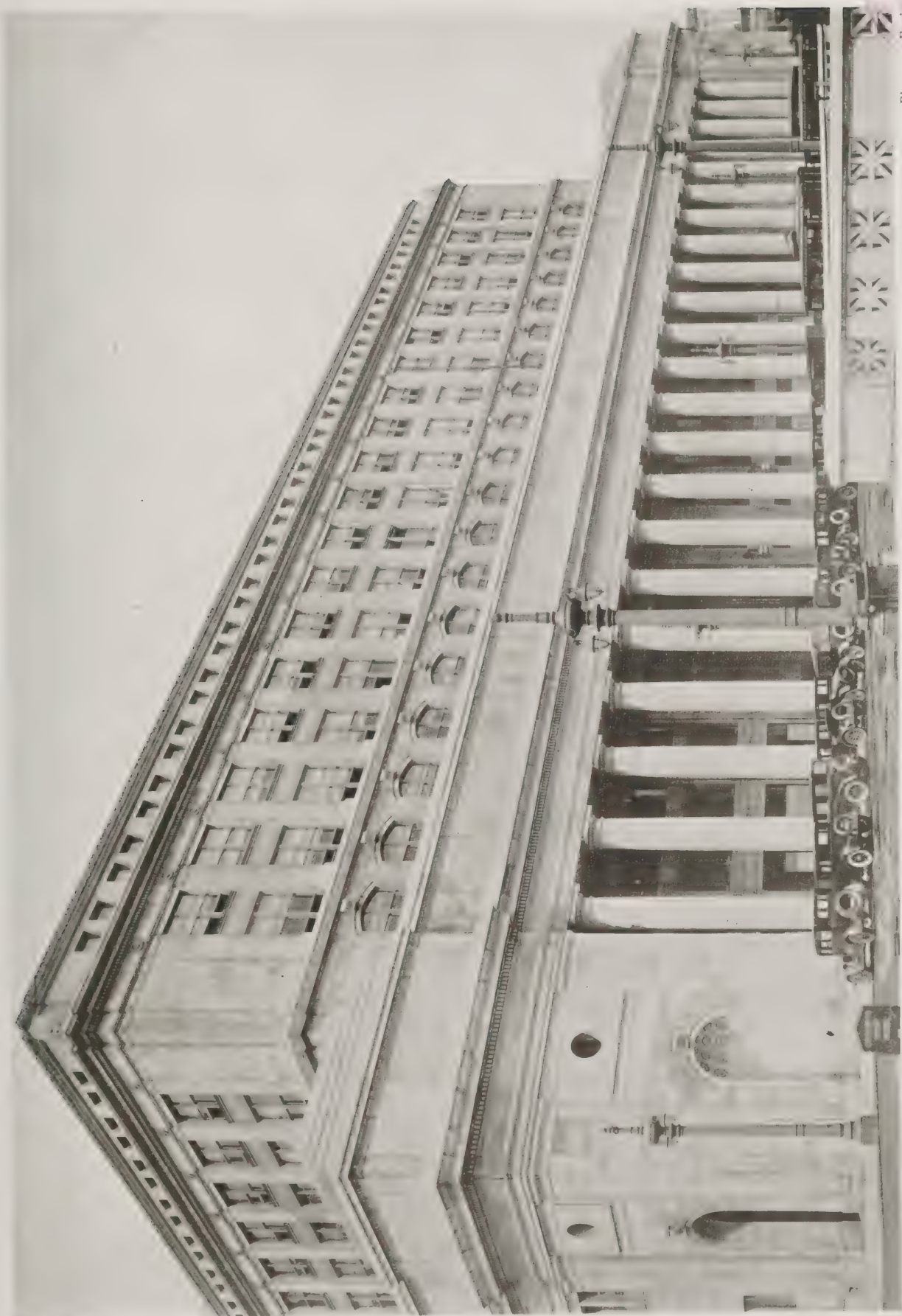
STREET LEVEL



WAITING ROOM LEVEL

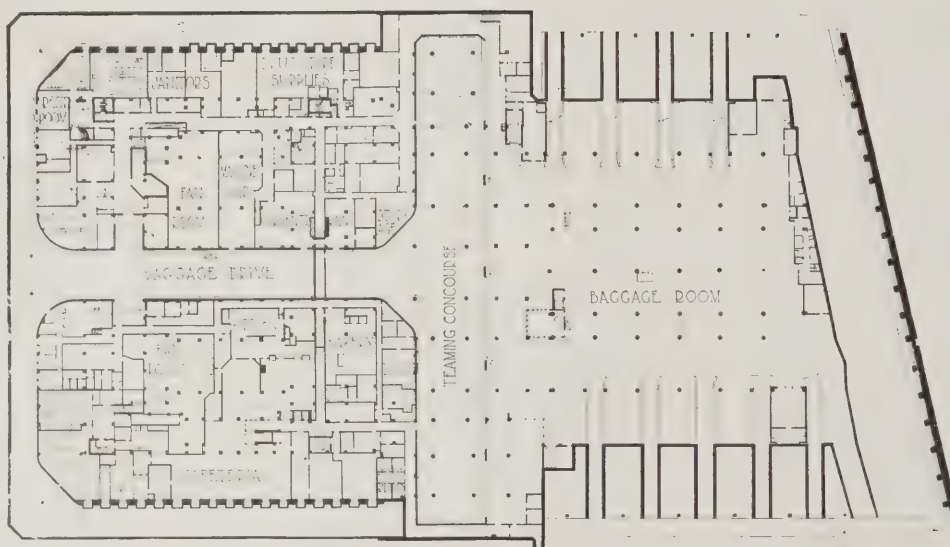
CHICAGO UNION STATION

GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



Plans on Back

CANAL STREET FACADE
CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



BASEMENT LEVEL

CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS





ENTRANCE, RIVER FRONT
CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



DETAIL, MAIN WAITING ROOM
CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



MAIN WAITING ROOM
CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



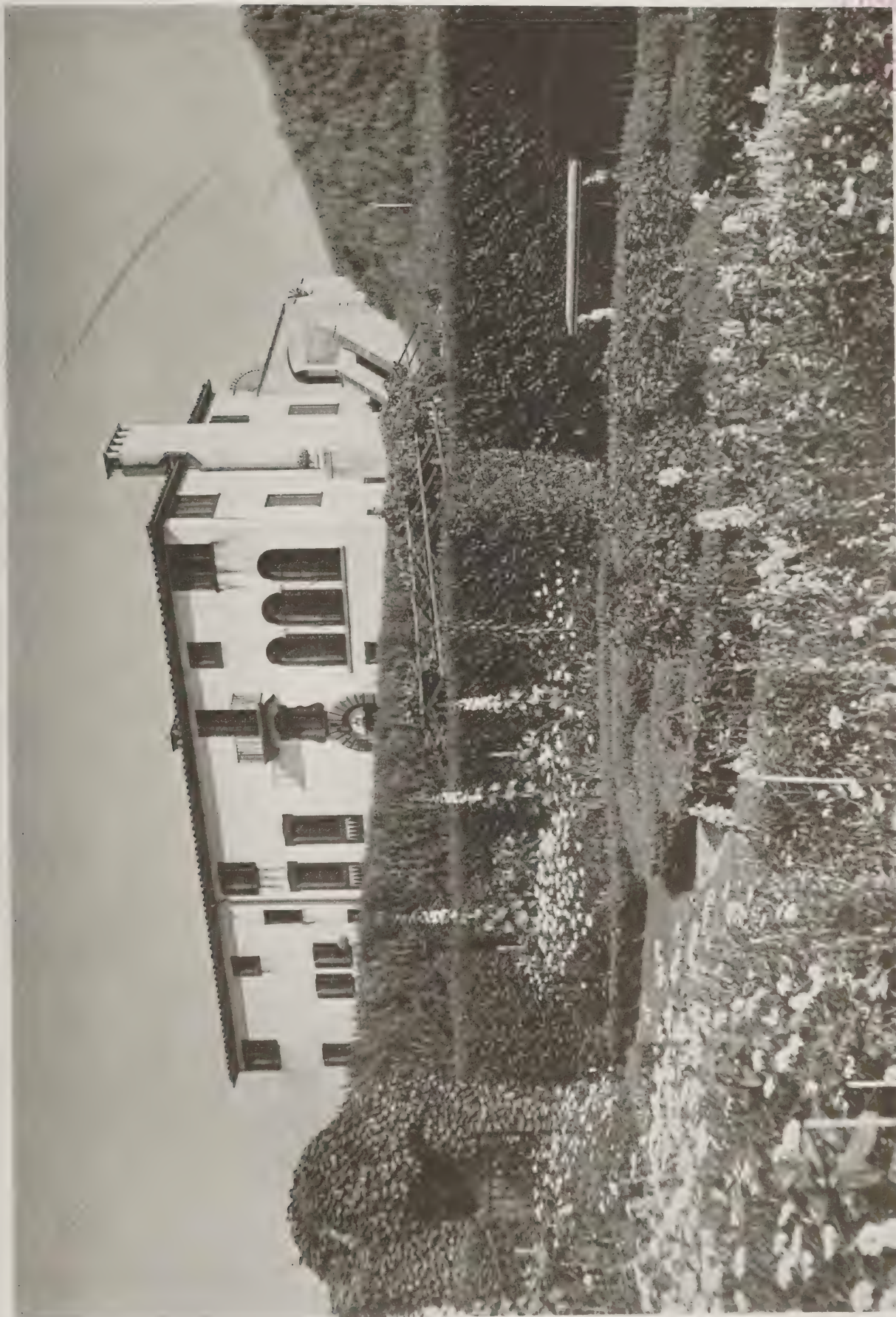
MAIN WAITING ROOM FROM TICKET LOBBY
CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



SECONDARY CONCOURSE
CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



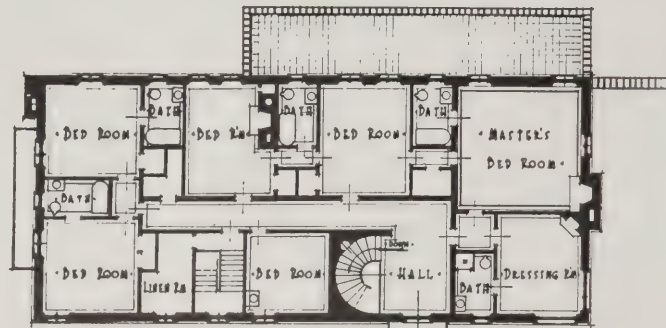
SECONDARY CONCOURSE, SHOWING ENTRANCE TO MAIN WAITING ROOM
CHICAGO UNION STATION
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



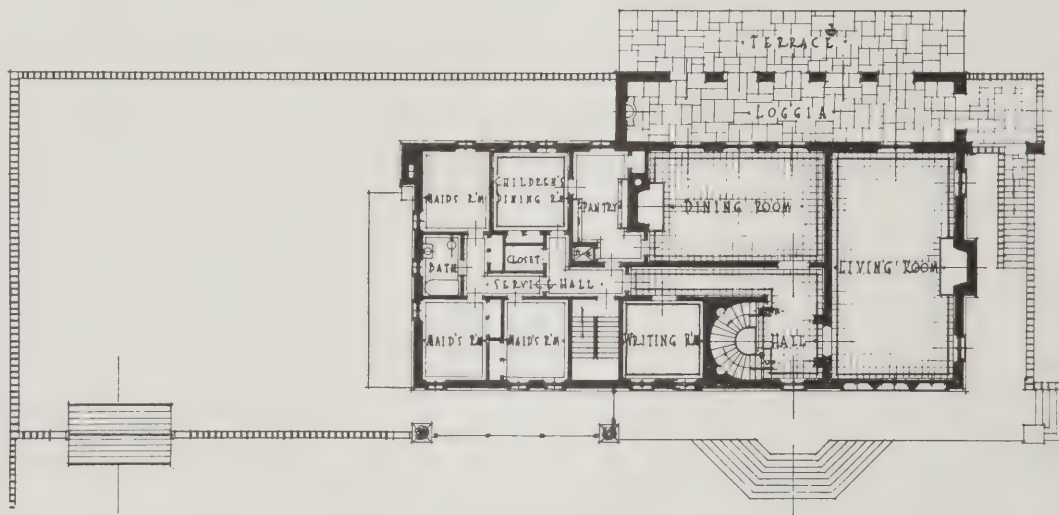
Photos George H. Van Anda

THE VILLA MARIA, SOUTHAMPTON, N. Y.
EDWARD P. MELLON, ARCHITECT

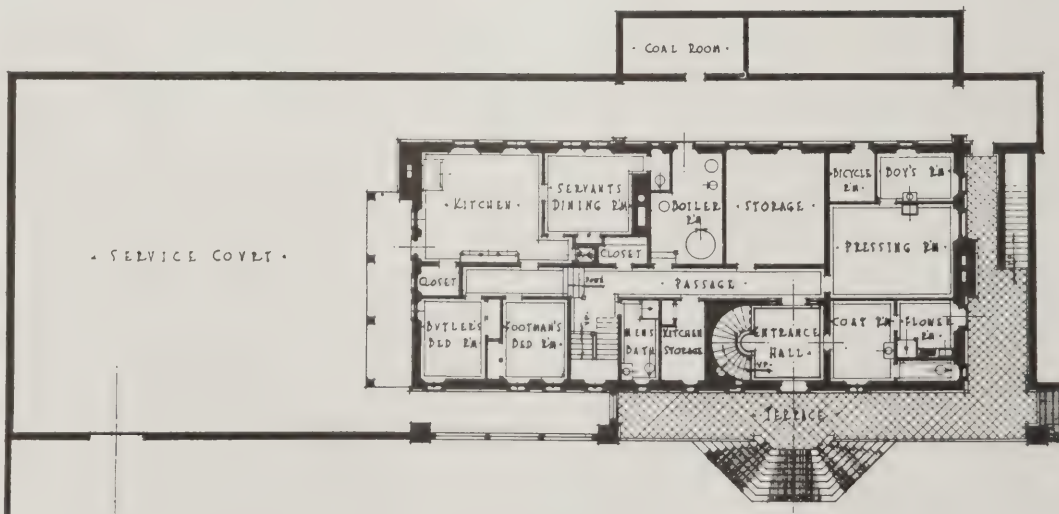
Plans on Back



THIRD FLOOR



SECOND FLOOR



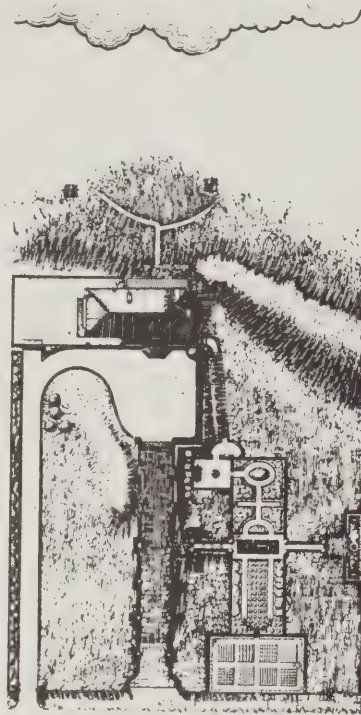
FIRST FLOOR



Plans on Back

GATEWAY, THE VILLA MARIA, SOUTHAMPTON, N. Y.
EDWARD P. MELLON, ARCHITECT

ATLANTIC OCEAN



MEADOW LANE



VILLA MARIA
on the Dunes
SOUTHAMPTON - LI

PLOT PLAN OF ENTIRE ESTATE



PLANS, GARAGE & CHAUFFEUR'S COTTAGE



ENTRANCE FACADE, THE VILLA MARIA, SOUTHAMPTON, N. Y.
EDWARD P. MELLON, ARCHITECT



ENTRANCE, THE VILLA MARIA, SOUTHAMPTON, N. Y.
EDWARD P. MELLON, ARCHITECT



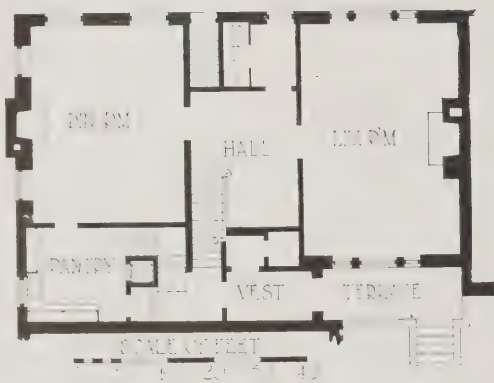
Photo. S. J. Hayward

SUMMERHILL TERRACE, LOOKING TOWARD CHELSEA PLACE, MONTREAL
BAROTT & BLACKADER, ARCHITECTS

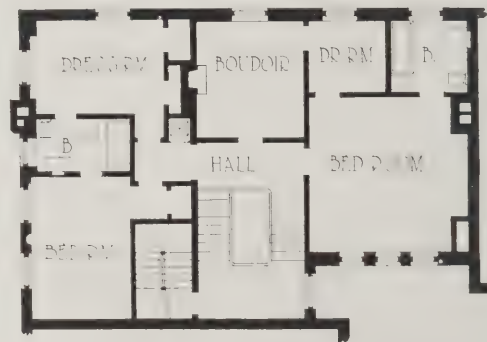
Plans on Back



THIRD FLOOR



FIRST FLOOR



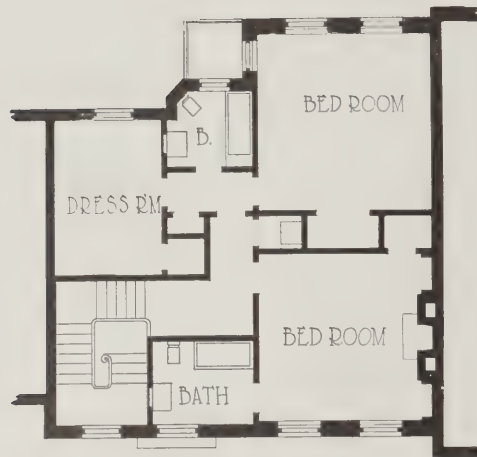
SECOND FLOOR

HOUSE NO. 5, CHELSEA PLACE, MONTREAL
BAROTT & BLACKADER, ARCHITECTS

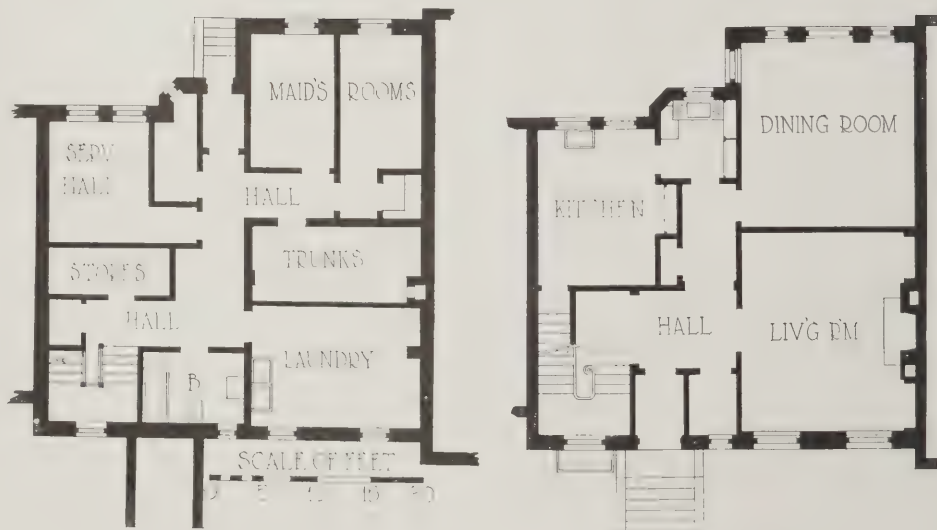


DETAIL, CHELSEA PLACE, MONTREAL
BAROTT & BLACKADER, ARCHITECTS

Plans on Back



SECOND FLOOR



BASEMENT

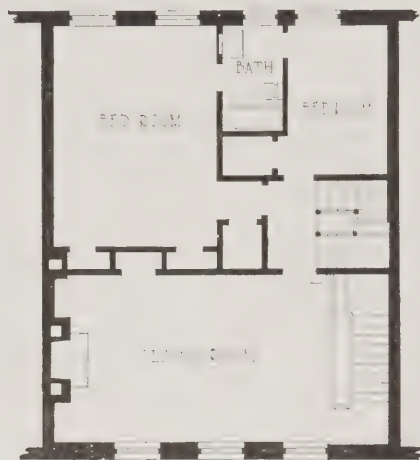
FIRST FLOOR

HOUSE NO. 6, CHELSEA PLACE, MONTREAL
BAROTT & BLACKADER, ARCHITECTS

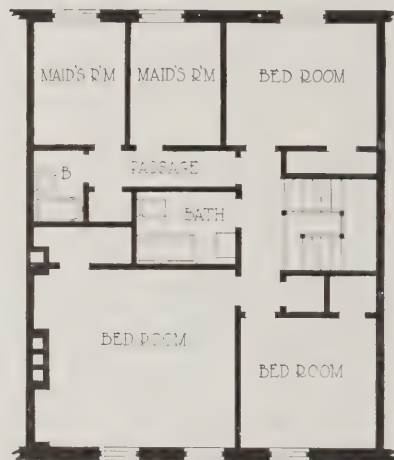


DETAIL, ENTRANCES, CHELSEA PLACE, MONTREAL
BAROTT & BLACKADER, ARCHITECTS

Plans on Back



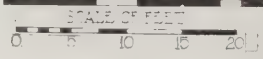
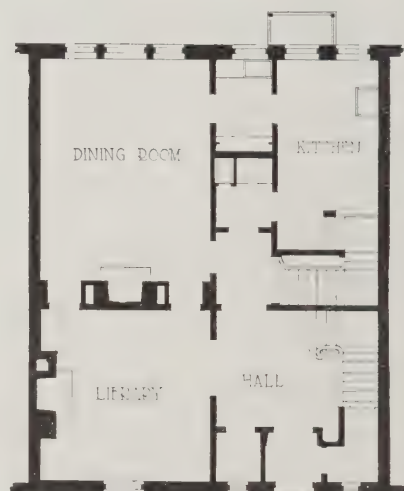
SECOND FLOOR



THIRD FLOOR

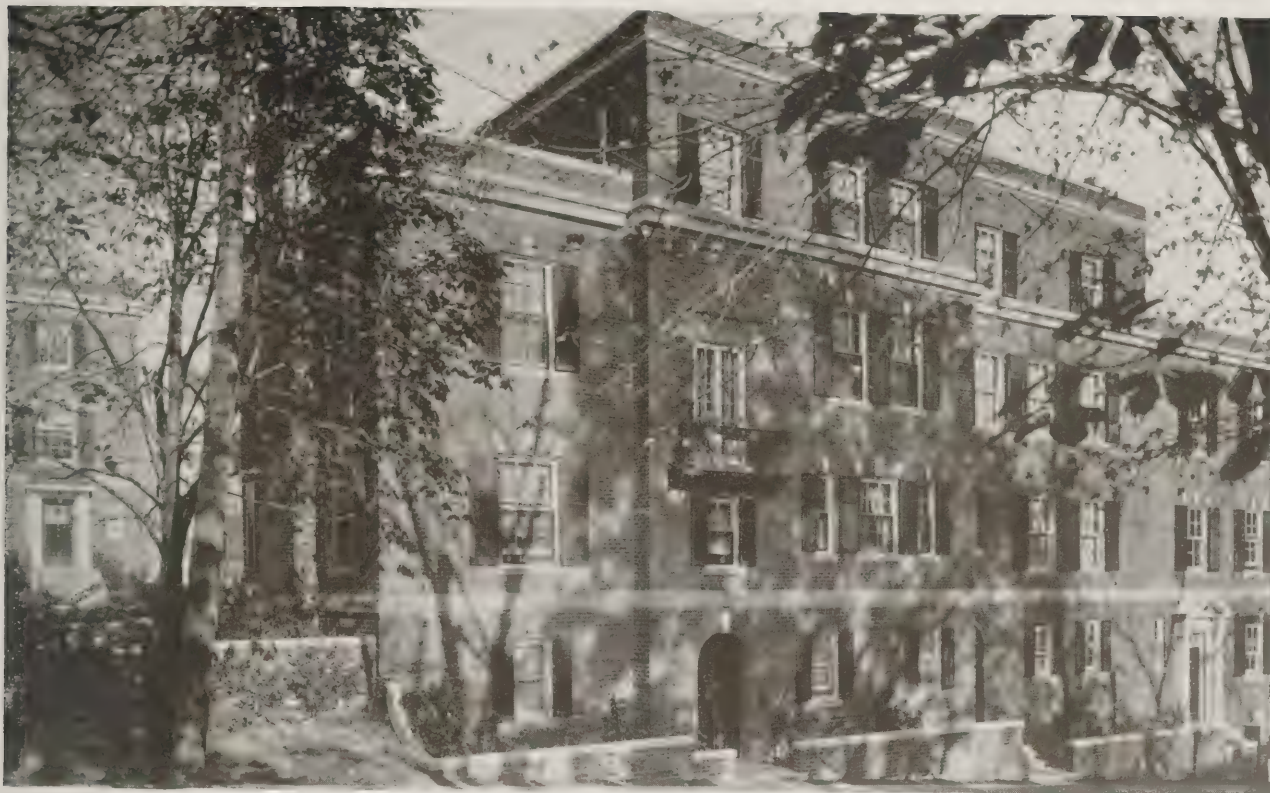


BASEMENT



FIRST FLOOR

HOUSE NO. 3, SUMMERHILL TERRACE, MONTREAL
BAROTT & BLACKADER, ARCHITECTS

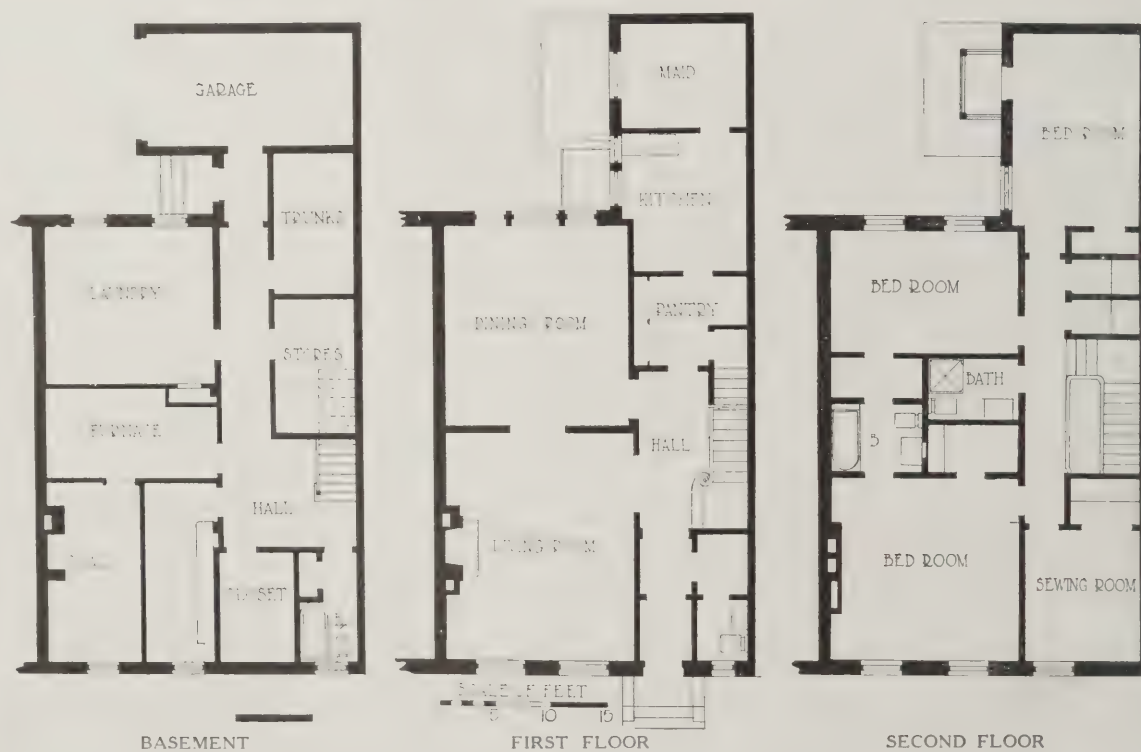
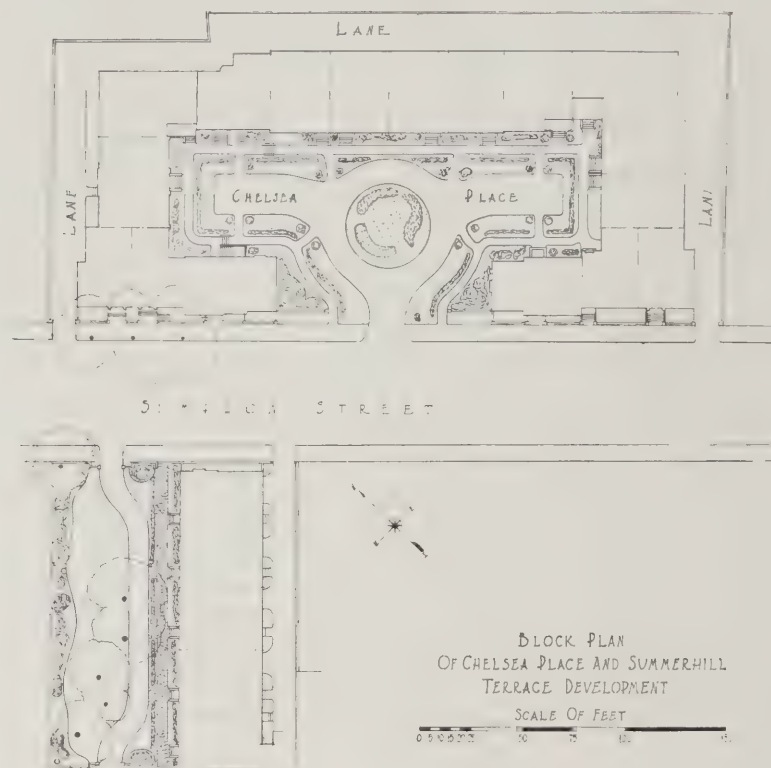


VIEW OF CHELSEA PLACE FROM SUMMERHILL TERRACE



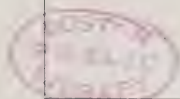
SUMMERHILL TERRACE, VIEW FROM SIMPSON STREET, MONTREAL
BAROTT & BLACKADER, ARCHITECTS

Plans on Back



HOUSE NO. 5, SUMMERHILL TERRACE, MONTREAL

BAROTT & BLACKADER, ARCHITECTS





Photos. George H. Van Anda

COTTAGE ON ESTATE OF RICHARD SELLERS, ESQ., BELLEVUE, DEL.
PRENTICE SANGER, ARCHITECT

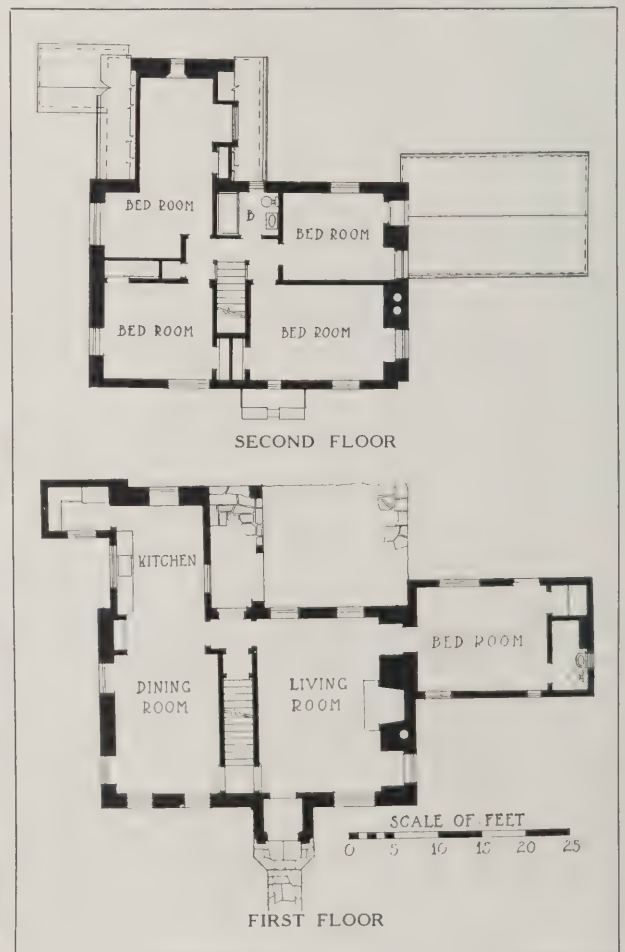


REAR ELEVATION

FROM the front elevation the size of this cottage is hardly to be appreciated, as a one-story bedroom wing extends from one end of the house, and a kitchen wing from the rear. The use of field stone, brought up to a fairly smooth surface with cement and then whitewashed, gives an unusual and pleasing character to the design. The use of half-timber and stucco for the front elevation of the second story is another satisfying variation, breaking the monotony characteristic of an all-stone house.

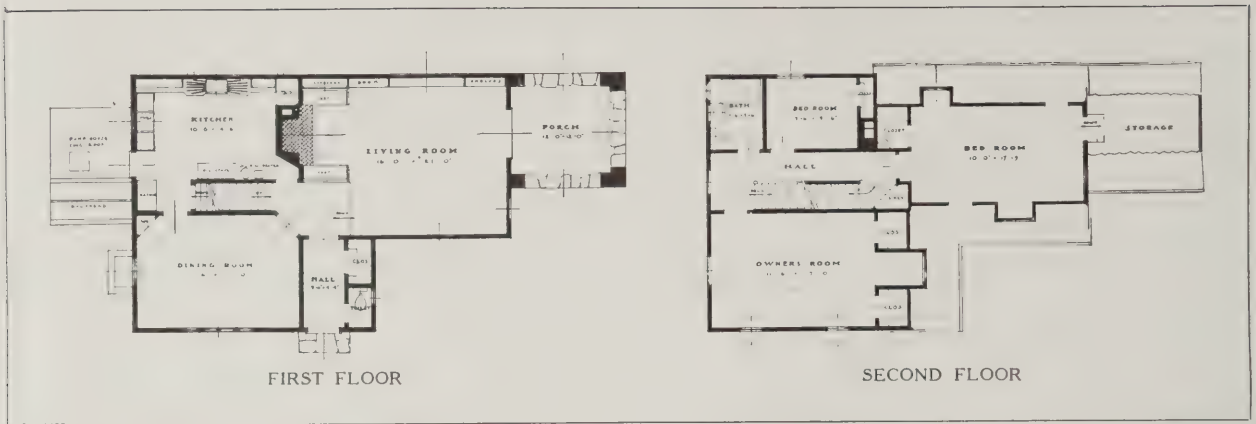


MAIN ENTRANCE





HOUSE OF JOSEPH S. ROBERTS, ESQ., CHAPPAQUA, N. Y.
MELVIN PRATT SPALDING, ARCHITECT



SIMPLE in plan and elevation, this house possesses a certain definite interest, owing to the size and placing of the windows, the broad unbroken wall surfaces, and the unusually interesting front door with its hood and its baluster transom. The roof of the main part of the house has a high ridge-pole, from which the roof slopes down over the first story on the side where the living room ell joins the main house. At the point of juncture a large brick chimney gives a picturesque and important note. Repeating the same roof slopes as the ell, a spacious living porch opens off the living room. Here heavy stone and half-timber work appear for the first time in the exterior design of the house. The stonework is of excellent workmanship, laid up to a flat surface, which might well have been repeated in the large chimney. Carefully designed

dormers not unpleasantly break the long roof slopes. Stability, solidity and severity characterize the exterior design of this wholesome, comfortable looking house. The first floor plan is simple and direct. The entrance hall, off which open a lavatory and cloak closet, leads directly into a corner of the large living room. A good sized dining room occupies the front of the house, back of which is the kitchen. Opening off the kitchen is the pump house, an essential part of any house located in the country. The second floor contains three bedrooms and a bath, two of which are of fairly good size, in spite of the space taken up by the roof slopes. This house contains approximately 25,208 cubic feet and was built in the summer of 1923 at a cost of 53 cents per cubic foot. It is an excellent example of an important and increasingly popular architectural type.



ENTRANCE

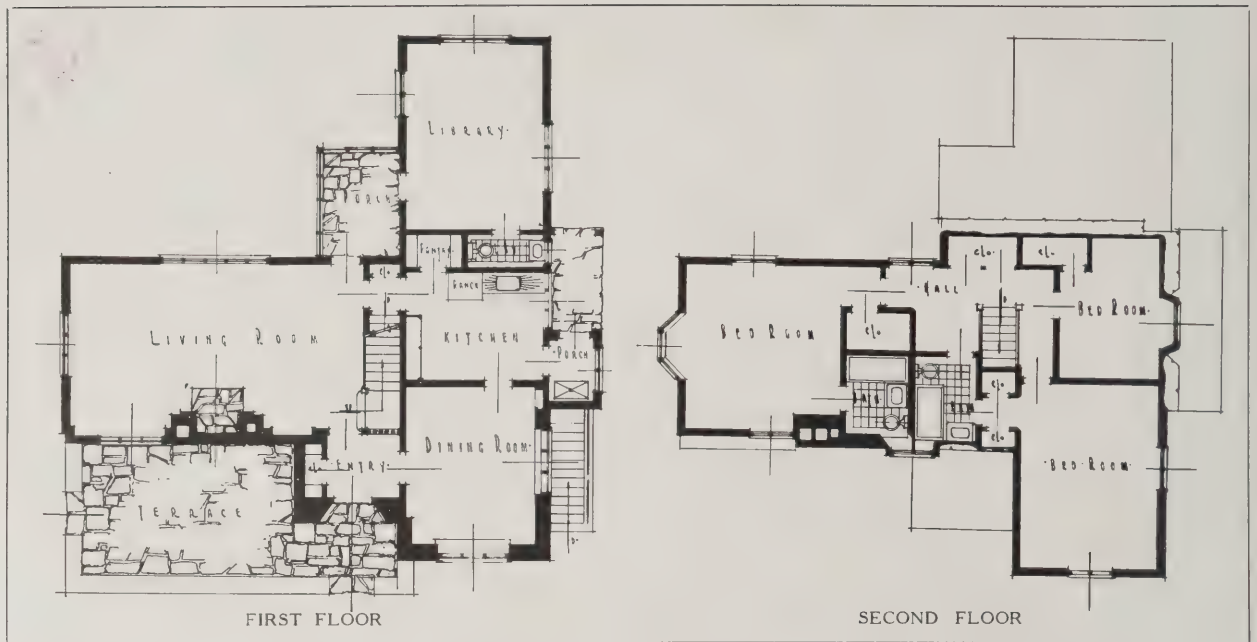


DETAIL, LIVING ROOM



Photos, John Wallace Gillies

HOUSE OF FRANK B. SMITHE, ESQ., DOUGLASTON, N. Y.
FRANK J. FORSTER, ARCHITECT



AT Douglaston, N. Y., Frank J. Forster, Architect, has built a number of attractive small houses, all of which show an unusual amount of picturesqueness and originality. Among these several houses none is more attractive than this one built for Frank B. Smith, Esq. Stone and rough-finished plaster are the materials, combined in the

intelligent and logical manner characteristic of this architect's country house designs. The windows of the first floor, which are of good size, and well located, are balanced in almost every case by smaller windows or dormers in the second story. Completed in October, 1924, this house contains a cubic footage of about 29,247, and cost per foot of about 75 cents.



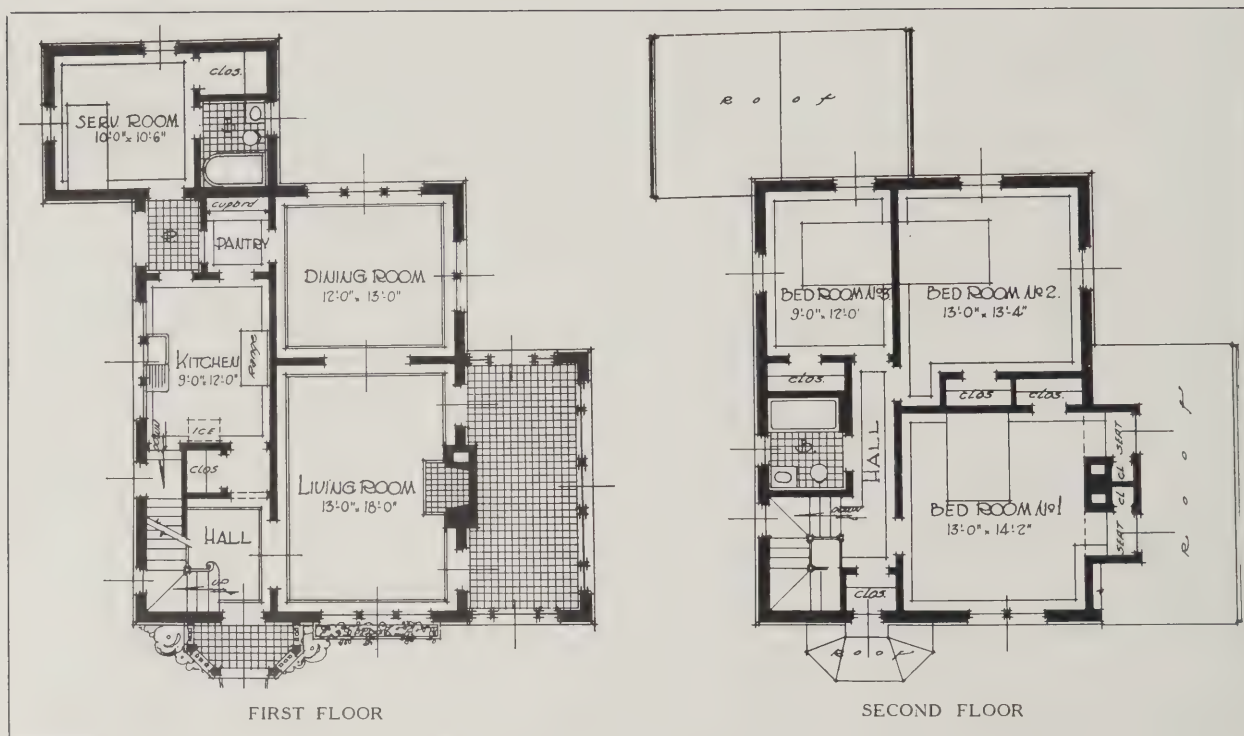
TERRACE



MAIN FACADE



HOUSE OF E. B. POWER, ESQ., BRONXVILLE, N. Y.
R. C. HUNTER & BRO., ARCHITECTS



FREE adaptation of the English cottage style to the requirements of a small American house is here well represented. Containing approximately 25,100 cubic feet, and built at the cost of 55 cents per cubic foot in 1922, this small house with walls of stucco over hollow tile shows an originality and charm in its design which might well be emulated

in more small houses. As the house is located on a corner plot, an entrance gate is provided from each street with walks leading to the front porch. This approach to the house is through a simple terraced garden, which, although informal, is thoroughly English in feeling and delightful in its abundance of varied planting of old fashioned shrubbery and flowers.



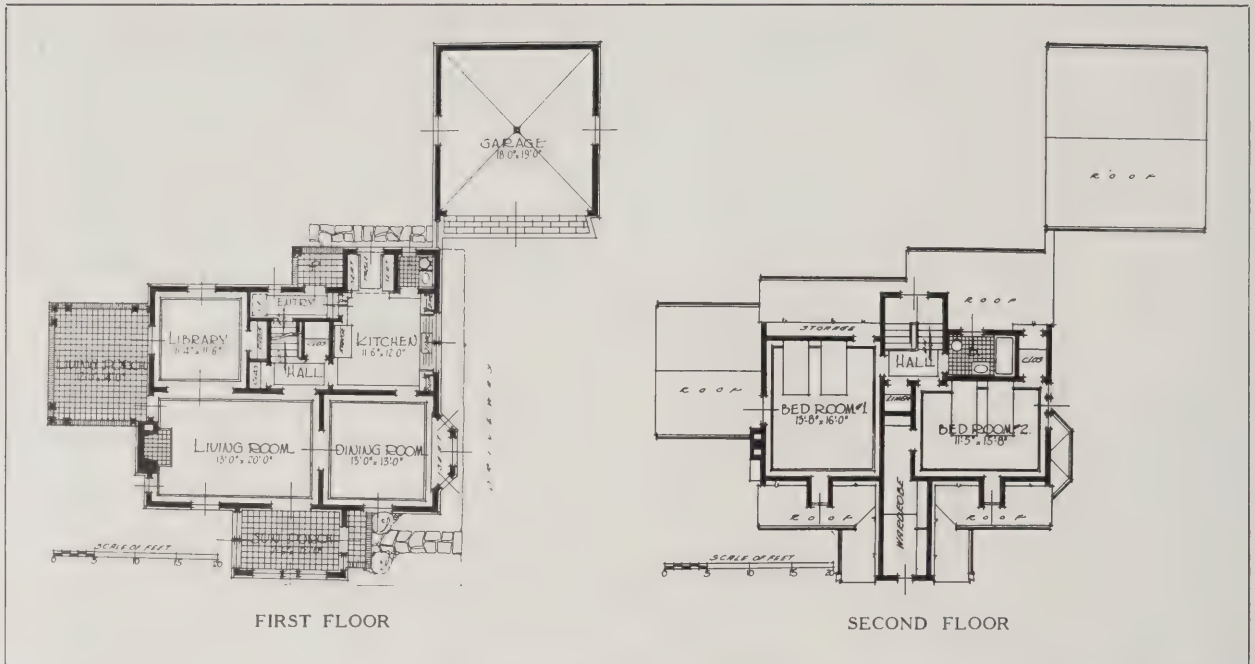
ENTRANCE



GARDEN FRONT



HOUSE OF THOMAS L. HEFFRON, ESQ., SOUND BEACH, CONN.
R. C. HUNTER & BRO., ARCHITECTS



THERE is a homelike quality about this small cottage in the English style which appeals to anyone wishing to have a small home of one's own. At the rear of the house is a garage which, although detached, is located so close to the house that it is only a step from the kitchen porch to the garage door. The cottage, which contains approximately 27,000 cubic feet, cost 55 cents per cubic foot in 1925. The general construction is wood frame, the exterior walls finished in stucco on metal lath. The floors of the house are oak, the heating is by hot water, the interior woodwork is white wood, and the interior walls are hard plaster which may be either painted or papered. This finish of the walls is not particularly appropriate to or consistent with the English cottage style, but in this country consistency between the exterior and interior architecture of a house is seldom considered as seriously as it should be. Studying the front elevation of this house leads to the conviction that the dormers are too tall for their width, giving vertical emphasis to these windows in sharp contrast to the low effect of the windows of the first story.

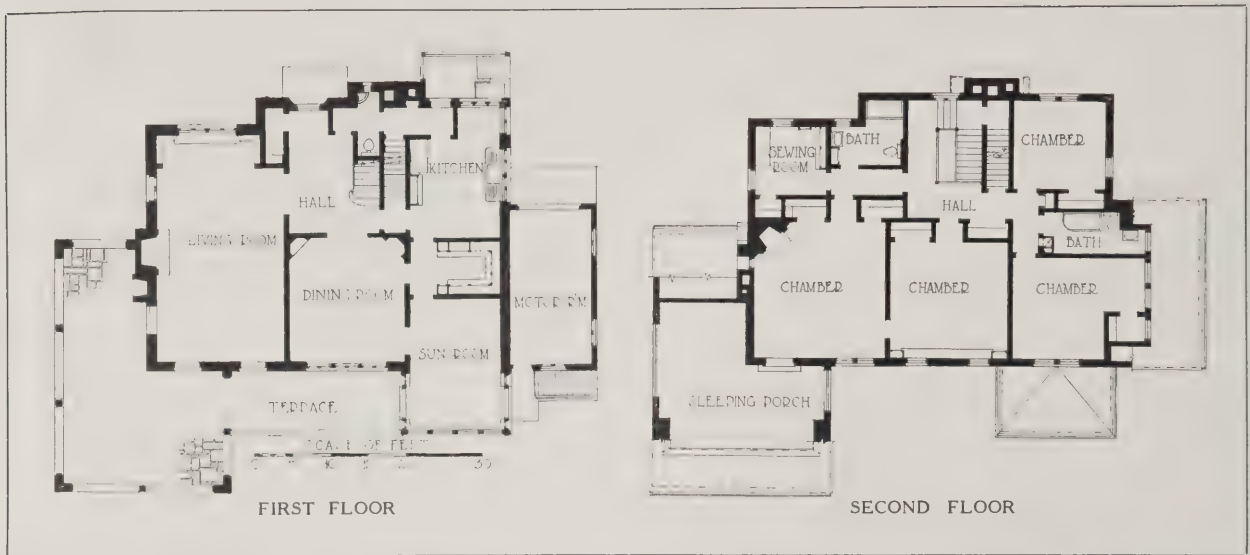


ENTRANCE AND SUN PORCH



HOUSE OF JAMES ROY OZANNE, ESQ., EVANSTON, ILL.
EDWIN H. CLARK AND CHESTER H. WALCOTT, ARCHITECTS

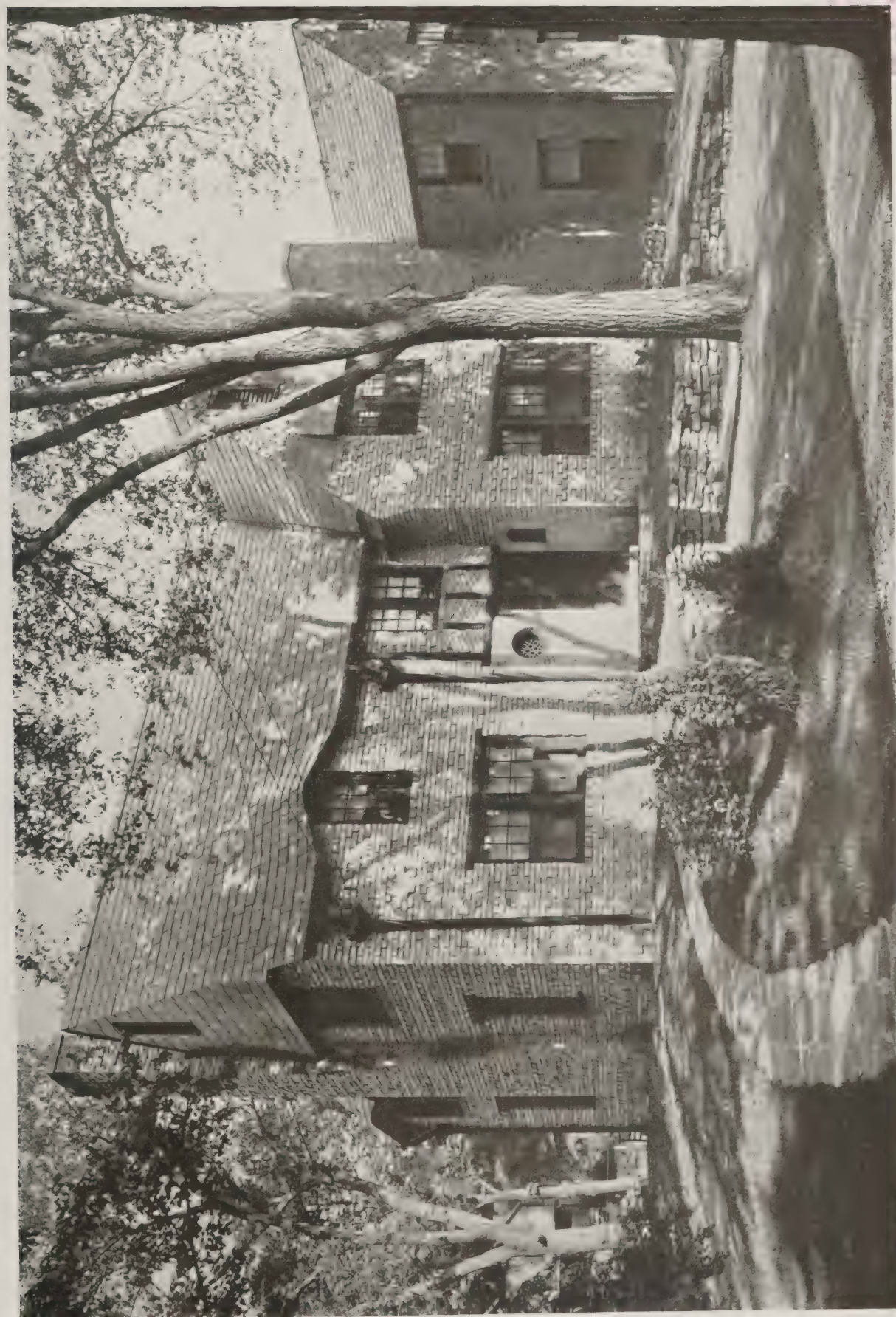
Photos. Treverbridge



"SKINTLED" brick has become very popular in certain sections of the country as a material for exterior walls. The surface obtained by the use of this brick, combined with very rough pointing, gives an interesting texture and color tone to the walls of a house. It should also make an excellent surface for the clinging of vines. In the suburbs of Chicago particularly, a large number of small houses have been built of this type of brick during the past five years. One of the most recently completed is the house of James Roy Ozanne at Evanston, the cubic contents of which are approximately 81,000 feet, which includes the garage as a part of the house. The cost of the house when completed last year was approximately \$30,000. Although this Reference Number of THE FORUM is intended to deal with houses costing not more than \$25,000, in a case where the garage is built as an integral part of the house, \$30,000 is set as an approximate cost limit.

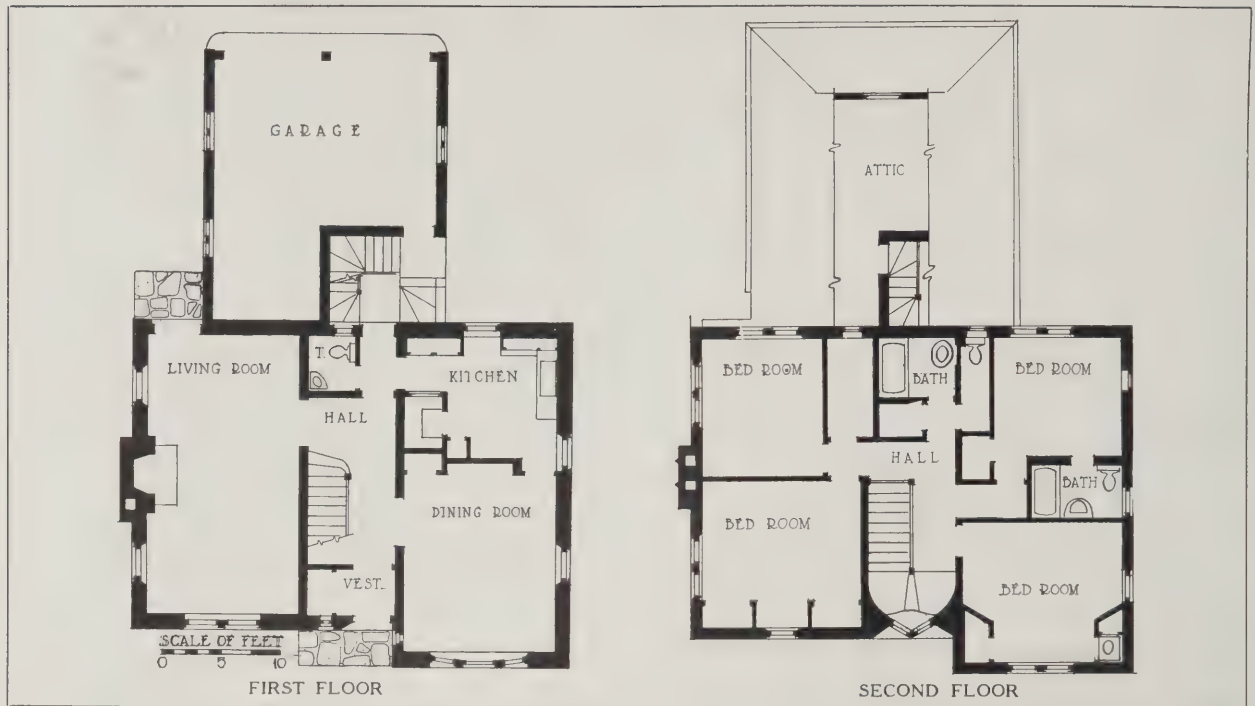


ENTRANCE FACADE



HOUSE OF DANIEL H. ELLSWORTH, ESQ., WINNETKA, ILL.
J. T. POMEROY, ARCHITECT

Photos. Trounbridge

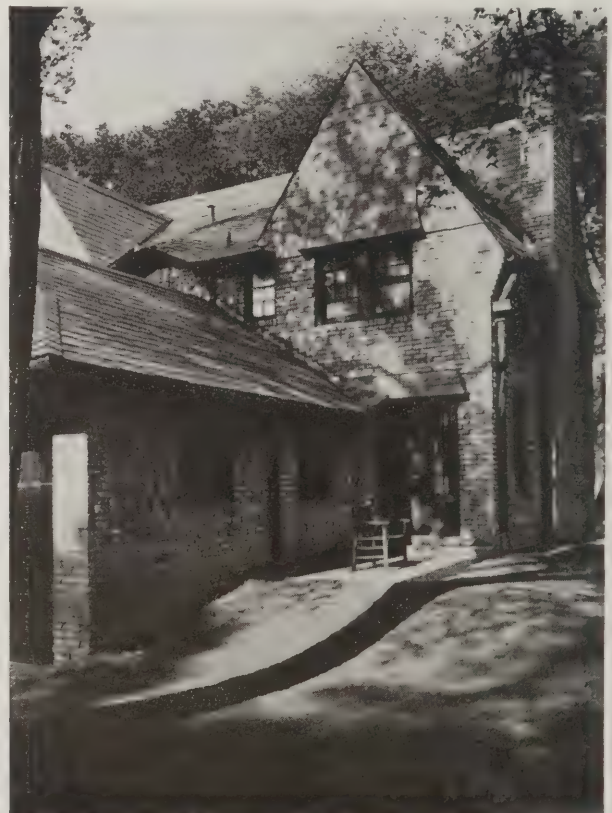


ANOTHER example of the use of skintled brick is found at Winnetka, Ill., in the house of Daniel H. Ellsworth, Esq., J. T. Pomeroy, Architect. This house shows a simple and straightforward design, slightly French in character on account of its steep straight roof and slated gable ends. The cubic footage is practically 29,000, and with the attached

garage (of 6,000 cubic feet), the cost is about 50 cents per foot. The garage, which is located at the back of the house on a level lower than the first floor, is reached by a short stairway from the rear of the entrance hall. Directly back of the dining room is the kitchen. This omission of a serving pantry is often desirable in small houses with few or no maids.



MAIN ENTRANCE

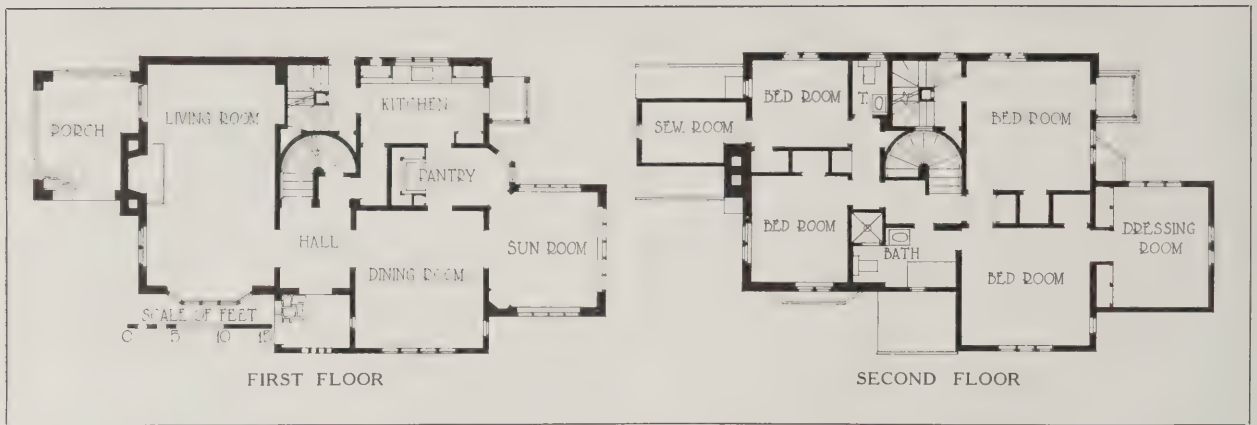


LIVING ROOM ENTRANCE



Photo. Thomas Ellison

HOUSE OF J. IVAN DIZE, ESQ., DETROIT
J. IVAN DIZE, ARCHITECT



BUILDING for himself, J. Ivan Dise, Architect, has obtained an attractive and comfortable residence. The exterior, treated in brick, half-timber and stucco, suggests that feeling of solidity and durability always associated with the English types of construction. The open porch off the living room, with its sharply pitched roof, relieves what might have been unpleasantly long lines in the outside chimney. The living room bay of pleasing proportions and the low-roofed entrance portico present attractive details. The plans of first and second floors show thoughtful consideration for space conservation and convenient arrangement of rooms. Typical of this is the utilization of the space above the open porch, where a small sewing room has been provided by the simple expedient of placing a win-

dow in the gable end. Without the window this area could have been used only for a closet or storage space. On the first floor the living room, to the left of the entrance hall, which extends the full depth of the house, together with the dining room and kitchen, one behind the other, utilize all the area except that occupied by the front hall and service entrance. Sun room and open porch give opportunity for outdoor comfort in both winter and summer. A dressing room over the sun room and four large bedrooms, in addition to the sewing room already mentioned, give assurance of adequate space and maximum comfort for the average family. Completed in 1925, this house, containing 34,452 cubic feet, cost 55 cents per foot. Both as to exterior and interior, it has been thoughtfully designed and planned.



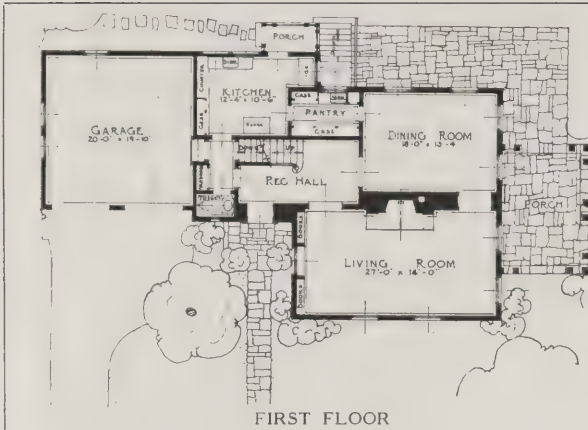
ENTRANCE



PORCH



HOUSE OF RALPH M. GATELY, ESQ., WINNETKA, ILL.
HUSZAGH & HILL, ARCHITECTS



FIRST FLOOR



SECOND FLOOR

AT Winnetka, Ill., Huszagh & Hill recently completed for Ralph M. Gately a very attractive small Colonial house with garage attached. The location and character of the design of the garage pleasantly suggest the old fashioned "long woodshed" attached to every Maine farmhouse. It is heartily wished that more attached garages could as perfectly complete the design of a house as is done here. The location of the entrance door, with the fine Palladian window above, is unusually well chosen, acting as a connecting motif between the main house and the garage. The spacious living room, which extends forward toward the street, is well indicated in the exterior design of the house. Back of the living room is the dining room, so

located as to connect with the living room porch as well as with an open rear terrace, where afternoon tea and summer suppers may be served. The plan of the second floor shows three good sized bedrooms and two baths, one bath so located that it is accessible from two of the bedrooms. The second floor is continued over the garage and contains a maid's room, sewing room and bath. As is often the case in small houses, one stairway serves for both family and servants. Careful study of the unusually interesting plan of this house, both the first and the second floor, proves that there are limitless variations in the plans of even small and moderate sized houses such as this, which cost \$20,000, or about 42 cents per cubic foot when it was completed in May, 1925.



ENTRANCE



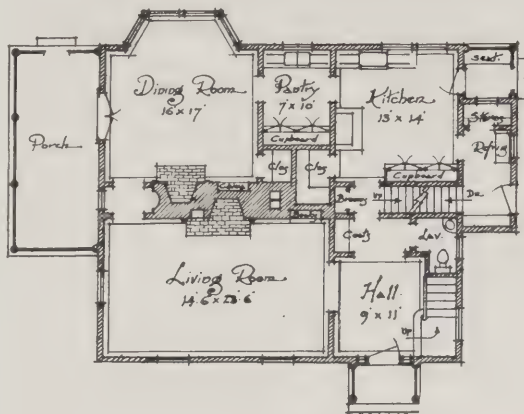
DINING ROOM



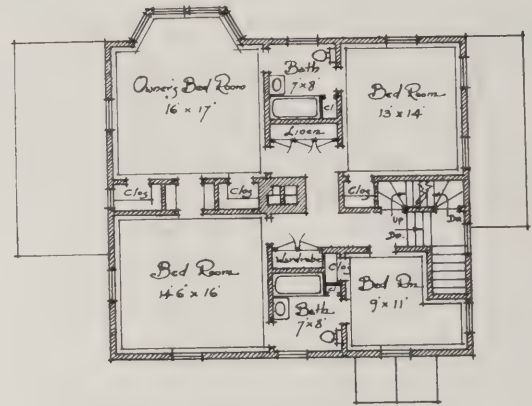
Photos. George H. Van Anda.

HOUSE OF MORRIS L. BEARD, ESQ., FLUSHING, N. Y.
ROGER H. BULLARD, ARCHITECT





FIRST FLOOR



SECOND FLOOR

THIS comfortable, old fashioned farmhouse built at Flushing, N. Y. in 1920 by Roger H. Bullard, Architect, for Morris S. Beard, Esq. cost to complete \$15,841, which was approximately 35 cents per cubic foot. So carefully studied and well designed is this house that it is difficult to realize that it was built only six years ago. As there is no more conscientious student of Colonial architecture and its details than Mr. Bullard, it is not surprising that this house of simple and almost severe design should possess very definite refinement and charm. The entrance

porch with its latticed panels and louver doors is an exact replica of several of the old New England porches. The use of paneled shutters for the lower windows and louver blinds for the upper is also characteristic of the Colonial farmhouse. One pleasant variation from the usual plan found in old houses of this type is the location of the entrance door and stair hall at one corner instead of at the center of the house. This permits an economical and direct plan, allowing the living room to occupy two thirds of the front of the house, making a spacious room.



THE HALL

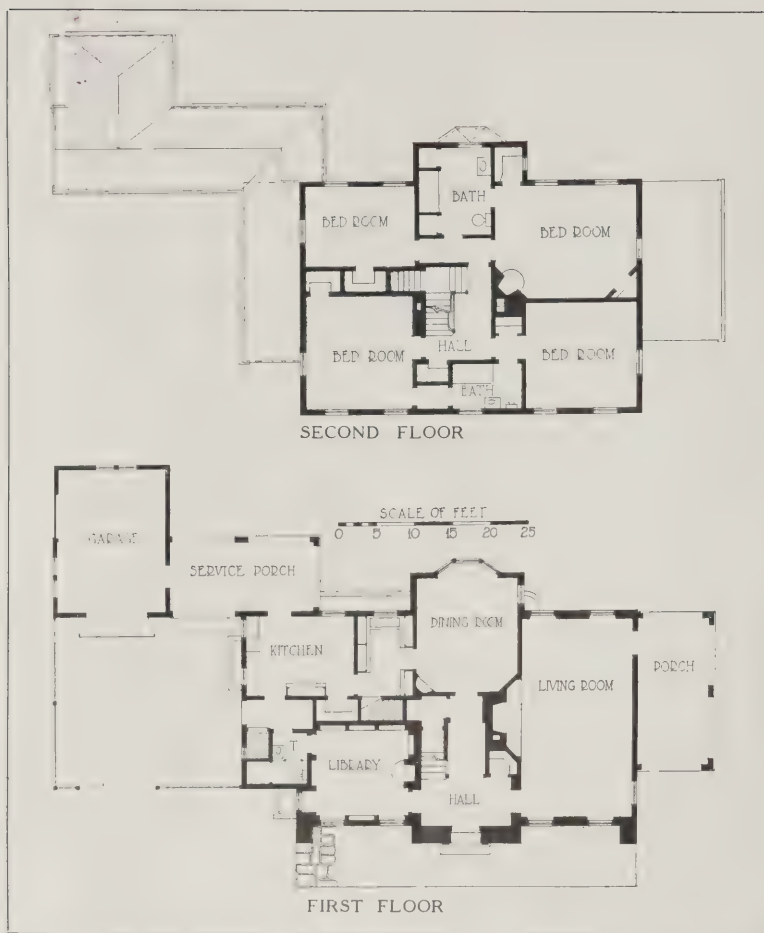


ENTRANCE



Photos, George H. Van Anda

HOUSE OF R. C. PROCTOR, ESQ., RYE, N. Y.
H. M. WOOLSEY, ARCHITECT



AT Rye, N. Y., a house designed by H. M. Woolsey, Architect, for R. C. Proctor, shows the spirit of some of the early American farm-houses carried out in an attractive and interesting manner. The use of rough stone laid up with cement to a flat surface for the walls of the first story, and the deep recesses on either side of the front door, add much to the unusual character of this comfortable looking home. It is rather to be wished that the same type of white-washed stonework had been used for the arched porch which opens off the living room. The heavy English Renaissance detail of the entrance door harmonizes well with the solid and rugged character of the house. The plan is straightforward and balanced, a library on one side of the entrance hall and a living room on the other, with the dining room at the rear. One of the best features of the first floor plan is the coat room with lavatory off of it, which connects the library with a side door leading into the service court. This arrangement makes it conveniently possible to reach the garage without going through the kitchen and through the service porch.



LIVING ROOM

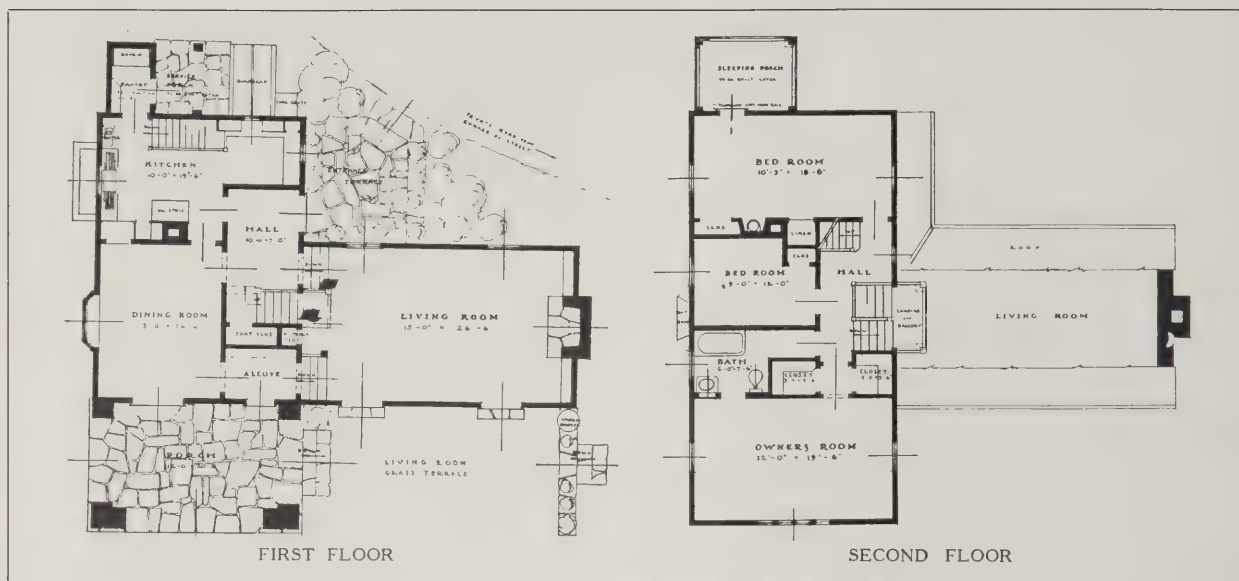


ENTRANCE



Photo. Kenneth Clark

HOUSE OF MELVIN PRATT SPALDING, ESQ., CHAPPAQUA, N. Y.
MELVIN PRATT SPALDING, ARCHITECT



AMONG several exceedingly attractive small houses built by Melvin Pratt Spalding at Chapqua, N. Y., is this built for his own occupancy. The uneven and rocky site has given him an opportunity of designing a building somewhat more picturesque than is often possible. The main entrance of the house is located in the corner formed by the living room wing and the main house. A flagstone walk leads up to a Dutch entrance door. From the entrance hall three steps on the left lead down into the living room. The stairway faces one on entering, and the dining room is at the right. Opposite the entrance a small door leads directly into the

kitchen. A little study of this interesting plan will make clear its directness and practical value. Off the stair landing is a good sized cloak closet, beyond which is another large closet opening off the living room. This living room, which is a story and a half in height, is open up to the timbers of the roof. At the inner end of this room, the stair landing forms an open balcony, making a pleasing architectural feature. The second floor contains three bedrooms, a bath and sleeping porch. Completed in 1923, this house, which contains approximately 31,872 cubic feet, cost 48 cents per foot. The house is unusual, distinctly individual, and picturesque to a high degree.



LIVING ROOM

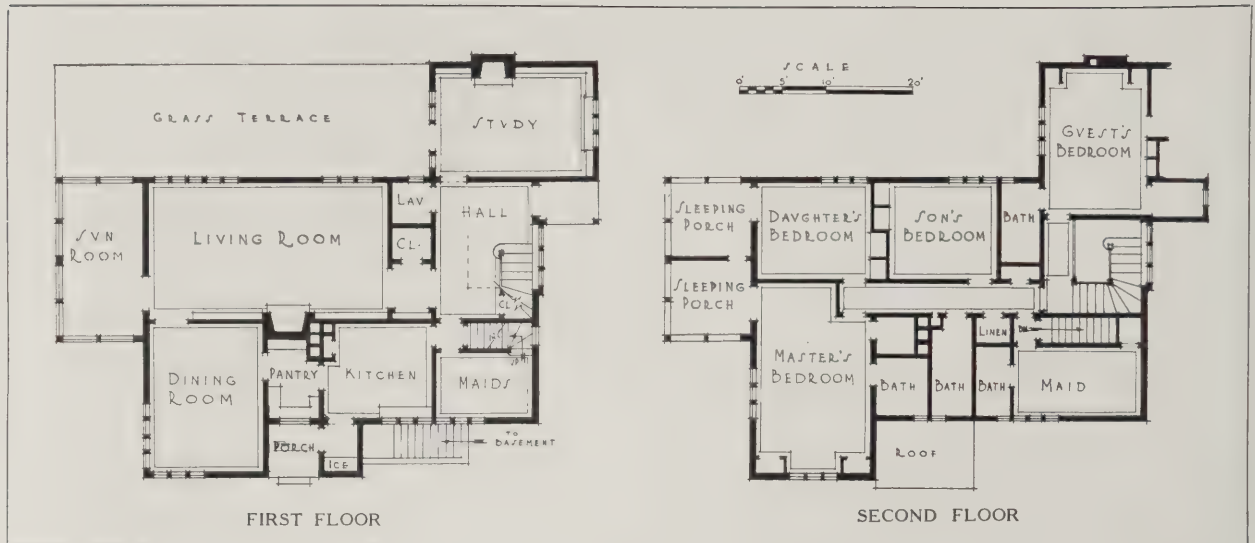


ENTRANCE



Photos. Tetbs & Kuel, Inc.

HOUSE OF J. E. BROWN, JR., ESQ., PRINCETON, N. J.
SHERLEY W. MORGAN, ARCHITECT



IN Princeton a small house of unusual character was recently completed by Sherley W. Morgan, Architect. Containing approximately 50,000 cubic feet and built at a cost of 50 cents per cubic foot in 1925, this small house shows an originality and quaintness of design which places it in a class by itself. Although the exterior walls are covered with 10-inch clapboard siding painted white, the rough-hewn details of the little entrance porch and the steep roofs suggest the type of cottage found in Kent rather than an early American prototype. The illustrations show the entrance front of this cottage. When the plan is studied, the house will be found to be much larger than the entrance front indicates.

The living room and dining room have been logically placed at the rear of the building, where advantage may be taken of the privacy of the garden and rear lawn. The kitchen and maid's room are located near the street front on the first floor. This makes it possible to have the service entrance at no great distance from the highroad. The second floor shows an amazing number of rooms for a house which appears, from the street, to be so small and to have much space given up to long, low roofs. The plain, rough plaster walls and the simplified interior trim produce architectural consistency between the interior and exterior architecture of this house, which means desirable harmony within and without.



ENTRANCE

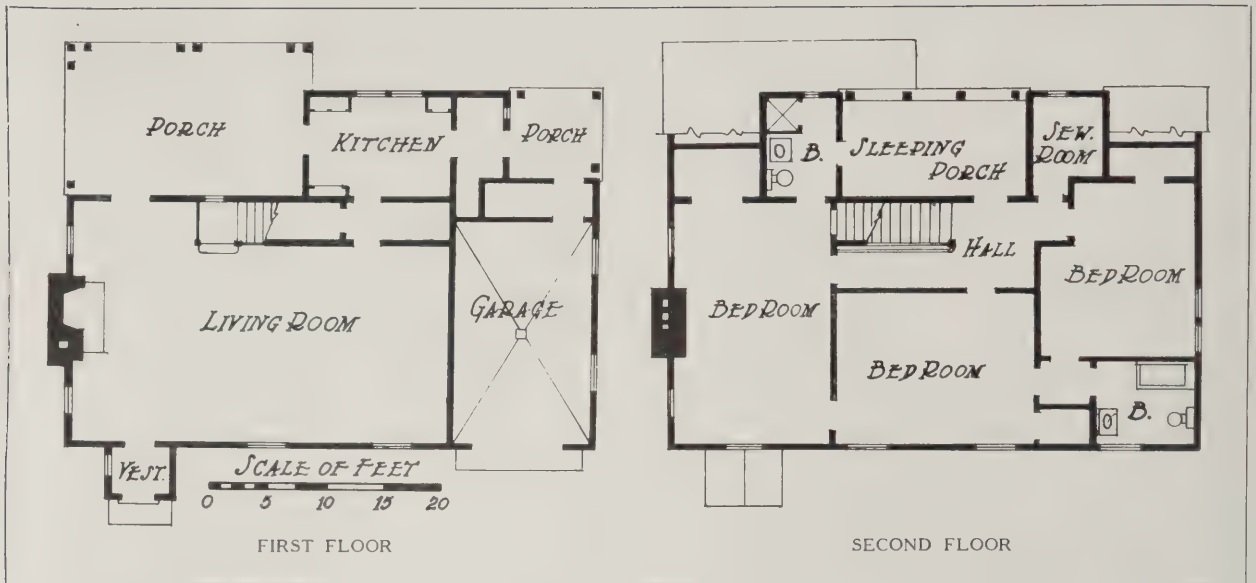


LIVING ROOM



HOUSE OF R. L. BATES, ESQ., KEW GARDENS, N. Y.
DWIGHT JAMES BAUM, ARCHITECT

Photo. S. H. Gottscho



ONE look would convince any student of modern American domestic architecture that this house was the work of Dwight James Baum. The pleasant prominence given to the front door by its projection of 4 feet from the main house; the successful way in which the garage with its shed-like doors has been made a part of the design; the long,

low, homelike effect produced by the row of four windows on the second floor; all these mark the house as the work of an architect well versed in the handling of Colonial details. Completed in 1924, it contains approximately 38,650 cubic feet and cost 50 cents per foot, which, however, did not include the amount represented by the architect's commission.

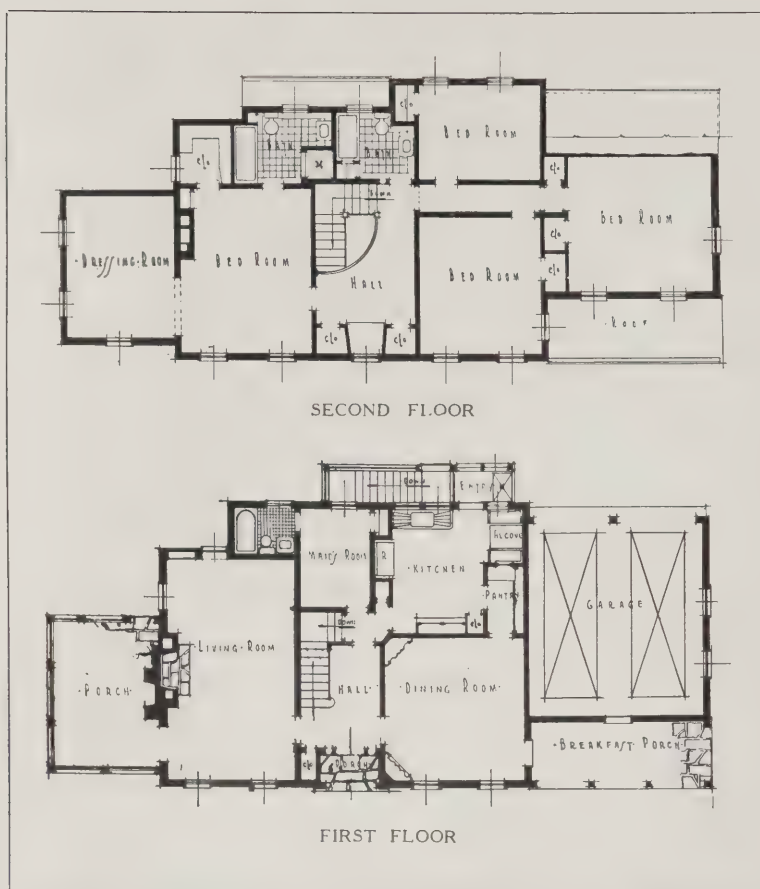


LIVING ROOM FIREPLACE



HOUSE OF CHESTER F. YOUNG, ESQ., PELHAM, N. Y.
FRANK J. FORSTER, ARCHITECT

Photos, John Wallace Gillies



LOCATED not far back from the village street in Pelham, N. Y., stands this delightful, homelike house designed by Frank J. Forster for Chester F. Young. If ever there was a house which bespeaks hospitality and good cheer, this is certainly it. The spacious recessed entrance door, the many small and well proportioned windows, the big end chimney and the arcaded breakfast porch are some of the elements which give to this house its unusual charm. Containing approximately 42,000 cubic feet, this building cost to complete, 62 cents per cubic foot in the summer of 1925. In plan the house differs but little from the average center hall farmhouse type, with the living room on one side of the entrance hall and the dining room on the other. A pantry and kitchen take their customary positions back of the dining room. One variation of the usual plan is, however, found in this house. At the rear of the front hall is a maid's room with bathroom opening off. The second story plan shows four bedrooms and two baths. A good sized dressing room opens off the principal bedroom.



BREAKFAST PORCH

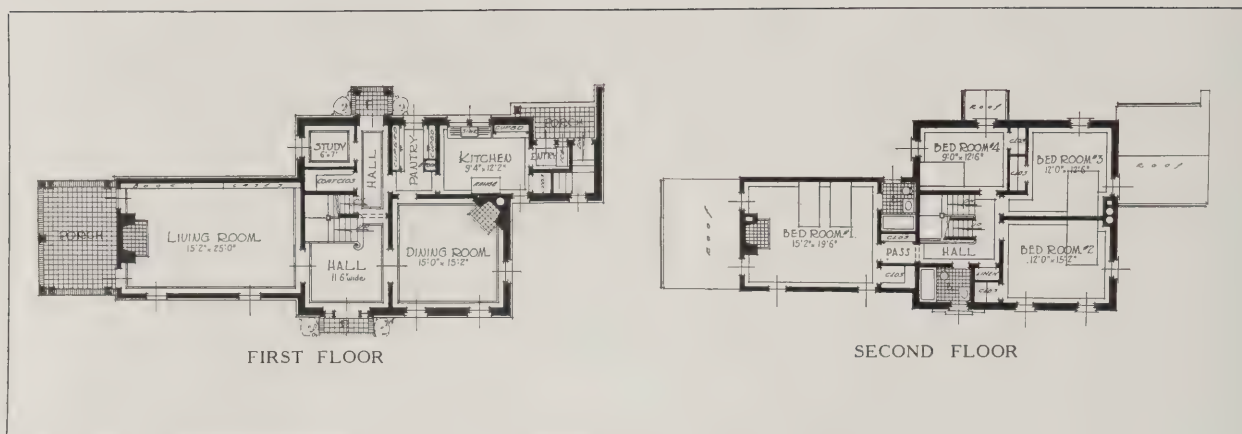


ENTRANCE



Photos, Kenneth Clark

HOUSE OF MISS LOUISE C. UNDERWOOD, TENAFLY, N. J.
R. C. HUNTER & BRO., ARCHITECTS



COMBINING rough common brick with white painted siding gives a distinct Colonial character and charm to this house built by R. C. Hunter & Bro., Architects, for Miss Louise C. Underwood, at Tenafly, N. J. Although a comparatively small house, its appearance leads one to believe it to be much larger than it really is. Every detail of the house, not only the main entrance and garden doors but also the paneled window shutters and the dormers of the ell, shows unusual appreciation and understanding of Colonial detail. It is seldom that the problem of designing a covered porch for a Colonial house is carried out as satisfactorily as in this case. It is an architectural treat to find a modern small house so carefully studied and successfully executed, as regards scale, proportion and detail,

which are the three principal elements of a successful design. Besides the pleasing diversity of materials, this house shows a well balanced relation in its masses. The variety in the treatment and placing of the material is a relief from the stiff formality of many Colonial houses. Balance is maintained through the principle of varying masses rather than upon symmetry, creating an informality which gives a more livable aspect to the house than does a scheme of design which is more strictly formal. The brickwork is of the clinker type, laid with raked joints and cement of natural color. This house, which was completed in 1924, contains an approximate cubic footage of 48,500, and cost to complete 56 cents per foot. This may be regarded as one of the most successful among the recently built small houses.



APPROACH TO MAIN ENTRANCE



THE GARDEN DOORWAY



HOUSE OF HENRY STUDE, ESQ., HOUSTON, TEX.
BRISCOE & DIXON, ARCHITECTS

Photos, Tebbbs & Knell, Inc.



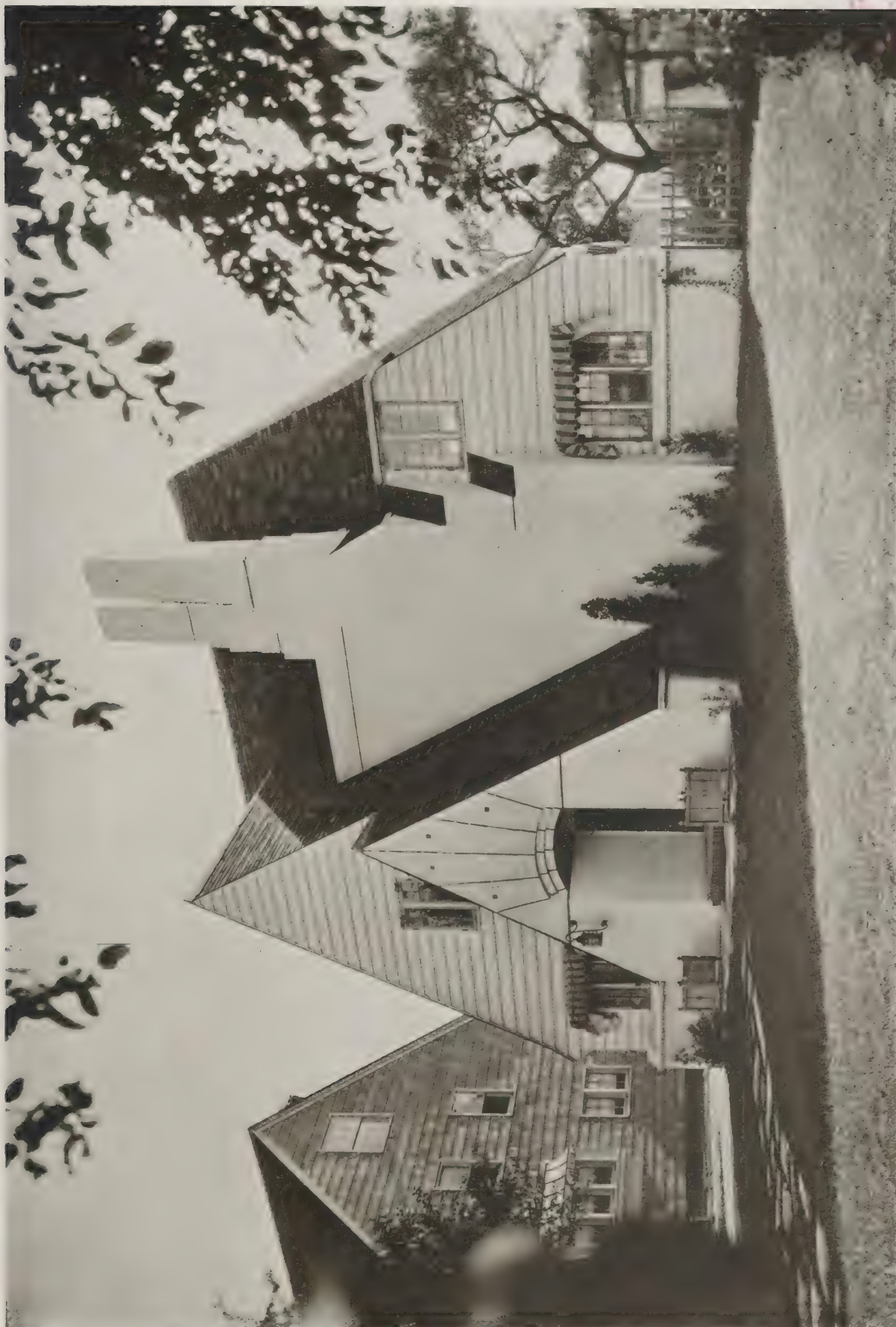
ANOTHER small house which somewhat suggests the use of the French style as a precedent is found in Houston, Tex., and was completed by Briscoe & Dixon in 1924 for Henry Stude, Esq. This house contains 43,400 cubic feet, and cost approximately 62 cents per foot. It is well placed on a level piece of property, with the first floor practically on a level with the grade. At one end of the house and connected with it by a masonry wall is a large garage of interesting design. High casement windows on the first story indicate the location of the living room, at the side of which is an entrance hall with a dining room at the rear. The living room and the servants' porch are, unfortunately, not shown in any of the illustrations, but are interesting and unusual in design, and add much to the quaint charm of this simple house. Carrying down the slope of the main roof over the entrance porch produces a pleasant note in contrast with the high staircase gable beside it, in which is a tall mullioned window. The French character of the design could have been more fully indicated had casement windows instead of double-hung been used throughout the house. Two tall chimneys help to give balance and character to the design.



LIVING ROOM ENTRANCE

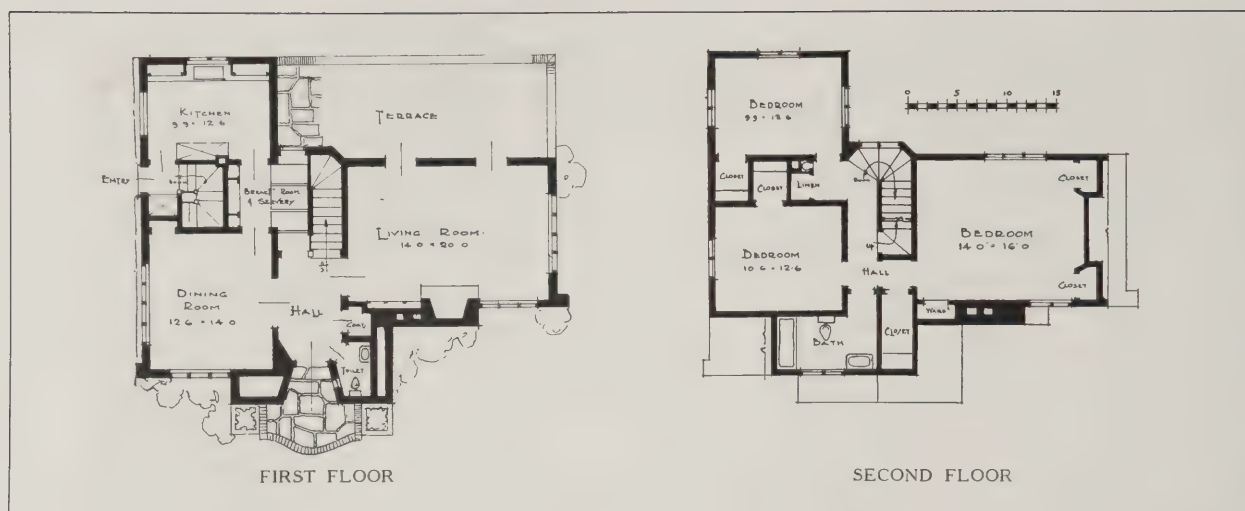


ENTRANCE PORTICO



HOUSE OF W. C. COIT, ESQ., CLEVELAND
BLOODGOOD TUTTLE, ARCHITECT

Photos, Ernest Graham Studio



IN Cleveland, Bloodgood Tuttle, Architect, has built for W. C. Coit, Esq., a house of unusual design. Its high peaked gables and steep roofs combined with a very massive double brick chimney, painted white, give the house a remarkably piquant and fanciful expression. Brick has been used for a high base course and the entrance door gable as well as for the massive chimney. The design certainly shows unusual originality and imagination, however much it may suggest to some people recent examples of domestic architecture in the suburbs of Berlin or Vienna. Originality in design is most welcome in these days of the close following of precedent. The interiors of the Coit house are simple and homelike. The paneled living room, recessed bookshelves, and spacious, tile-faced fireplace all indicate refinement and good taste. The plan of the house is less un-

usual than the exterior would suggest, but necessarily somewhat irregular. A living room, 14 by 20, is at the right of the entrance hall, and the dining room is at the left. A breakfast room or "servery" takes the place of the typical pantry between the dining room and kitchen. At the rear of the house on the first floor is a wide terrace opening off the living room. The plan of the second floor shows three rooms and a bath, with many large closets and a stair hall well lighted by a large window at the rear. Much of the charm of the exterior of the house is due to the combination of white painted brick and siding, in contrast to which the window frames are a bottle blue, and the roof is covered with vari-colored shingles. The projecting brick base course, extending to the window sills, ties the house to the ground in a solid and substantial manner.



LIVING ROOM

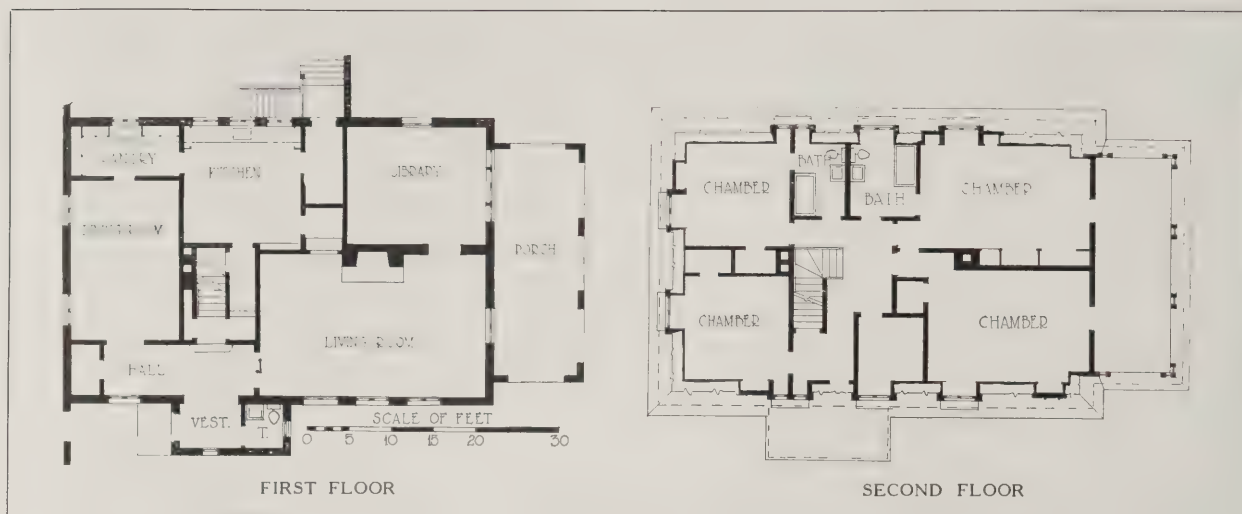


DINING ROOM



HOUSE OF J. M. DICKINSON, JR., ESQ., WINNETKA, ILL.
RUSSELL S. WALCOTT, ARCHITECT

Photos, Chicago Architectural Photo, Co.



A SMALL house of unusual interest and picturesque quality is this at Winnetka, Ill. A very high and steep shingled roof, casement windows and many roof dormers give a dignity, French in character, to the design, which is further heightened by the character and location of the small garage which is connected with the house by a high brick wall, forming one side of a small forecourt. The brick walls, painted white, and the projecting entrance porch with its arched doorway and urn finials, are characteristically French. The brickwork of the first story is laid up at the four corners as projecting quoins, emphasizing and strengthening the corners of the house. Painting all the brickwork white,—even the lofty brick chimneys,—further em-

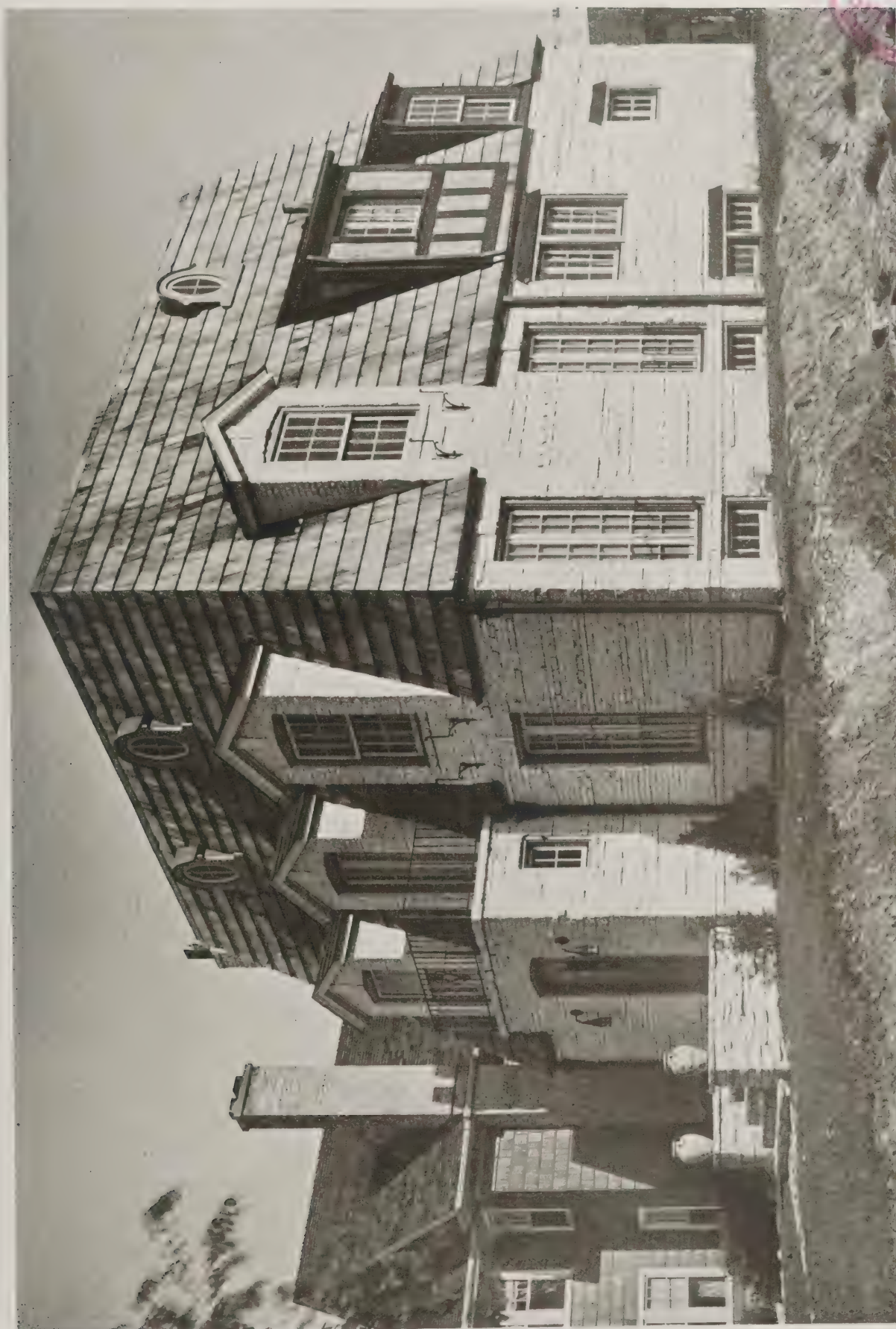
phasizes the French character of the house, which is both appropriate and suitable to its woodland location. In plan this house is quite as interesting as in elevation. Almost square in shape, the arrangement of the various rooms is as practical as it is unusual. An oblong entrance hall connects the living room and dining room, which are at opposite corners of the house. The stairway is attractively reached through an archway opening into the entrance hall. Back of the living room is a library, in which room it seems rather a pity that a corner fireplace is not included, as it could easily be connected with the chimney of the living room fireplace. 58,000 is the approximate cubic footage of this house, which cost 54 cents per foot in May, 1922.



ENTRANCE GATEWAY

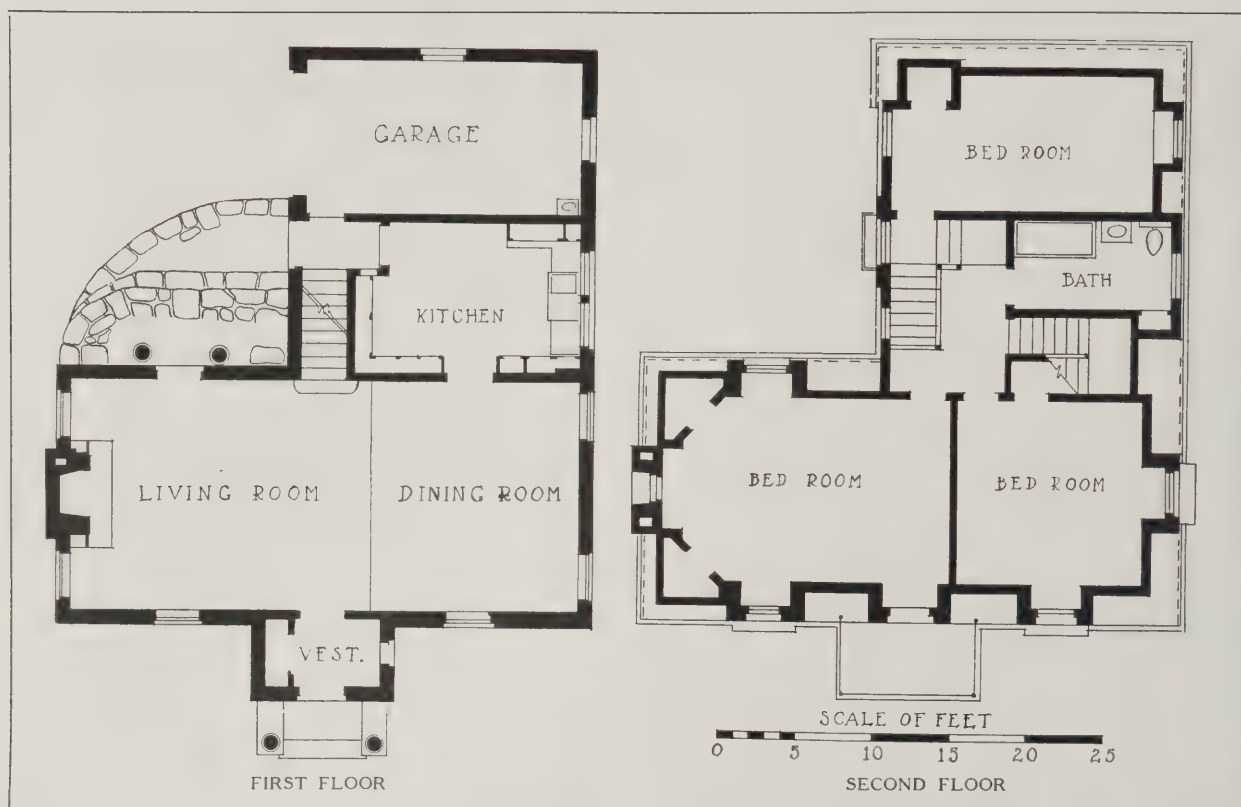


ENTRANCE FACADE



HOUSE OF WILLIAM CAMPBELL WRIGHT, ESQ., WINNETKA, ILL.
WILLIAM CAMPBELL WRIGHT, ARCHITECT

Photo: Trustbridge



PAINTED brick has been used in this adaptation of French architecture. The owner, the architect himself, has secured a pleasing result, notwithstanding use of the skintled brick and extra large roof shingles, neither of which is usually associated with French refinement of detail. The exterior is pleasing, perhaps because of its consistency, which is broken only by the dormer treated in half-timbered stucco. Oval lights, very French in feeling, are inserted near the house top. The entrance vesti-

bule opens into the living room, which with the dining room makes one large room across the entire front of the house. The kitchen back of the dining room and the garage complete the L shape of the building. Upstairs the three bedrooms and bath are all of ample sizes. Costing 40 cents per foot, this 46,000-cubic foot house has redwood roof shingles, oak floors, gum trim, rough plaster walls and full beamed ceilings, these ceilings aiding materially in giving definite expression to the house.



MAIN FACADE

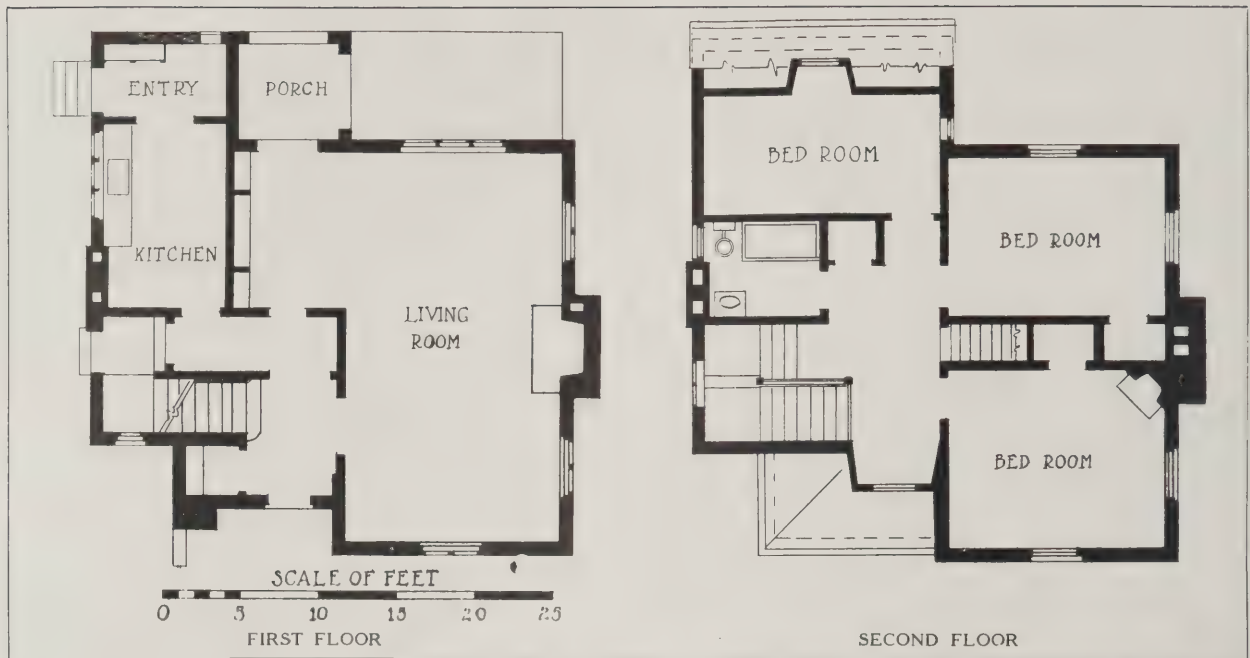


DINING ROOM



Photos. Tebbs & Knell, Inc.

HOUSE OF C. BLESCH, ESQ., COLUMBUS, O.
MILLER & REEVES, ARCHITECTS



SIMPLE adaptations of the formal French type of house are found more and more frequently among the latest small house designs. In Columbus, O., Miller & Reeves have recently completed for C. Blesch, Esq., an interesting small house suggesting in its smooth plaster wall surfaces, its dentil cornice and its high hip roof many of the small formal houses found in Versailles and other suburbs of Paris. Considerable originality has been successfully employed in working out the details, such as the slightly arched entrance door, the heavy wood balusters over the window of the lavatory, and the paved entrance terrace with its small painted gates. The first floor plan consists of an entrance stair hall, a large irregular shaped living room, and a kitchen. The second floor stair hall is well lighted by a dormer window which comes directly over the entrance door. This window does not improve the front elevation of the house, but it is indispensable as a means of lighting the second floor stair hall. The use of casements for the second floor windows as well as for the first would have given greater consistency to the design. This house contains 25,000 cubic feet, and was built in 1923 at a cost of about 40 cents per foot.

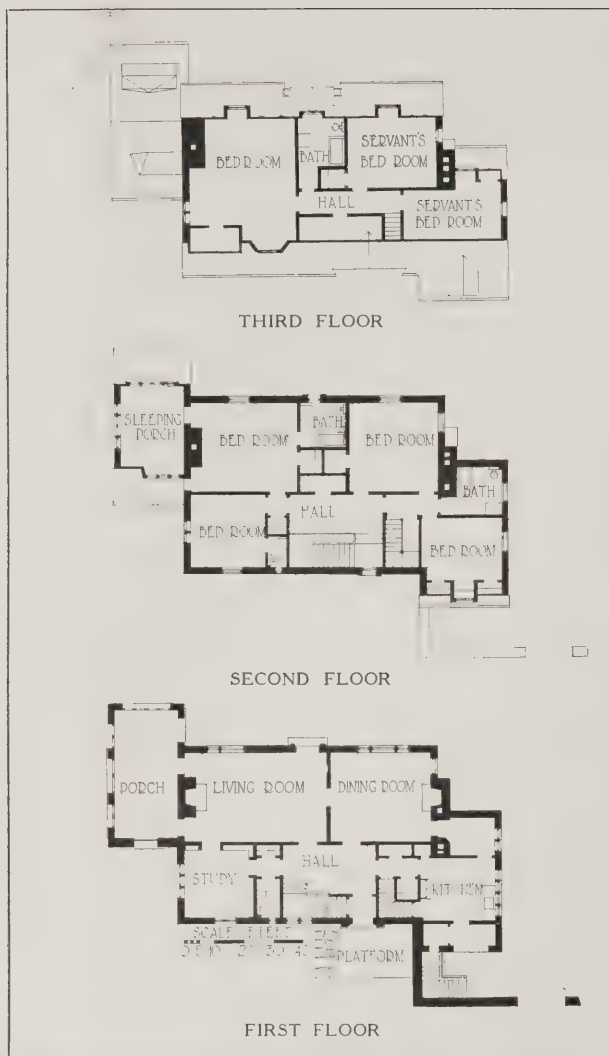


ENTRANCE



HOUSE OF DR. HARVEY G. BECK, GUILFORD, BALTIMORE
PALMER, WILLIS & LAMDIN, ARCHITECTS

Photos, Lobb & Knell, Inc.



THE mottled slate roof adds much to the artistic effect of this stucco-covered house, which somewhat suggests French precedent. Built in the suburbs of Baltimore a year or two ago by Palmer, Willis & Lamdin, it is an excellent type of suburban small house. The cut stone, used around the entrance door and in the projecting wall which conceals the service court, is in pleasant contrast to the rough-finished stucco walls. The stonework itself is sufficiently rough in character to harmonize perfectly with the rest of the design. As casement windows are used in the dormers and the large stairway window, it is rather to be regretted that complete consistency in the design could not have been obtained by their use in the other windows of the house. Very small windows used to light the servants' stairway on one side of the entrance door and the first and second floor toilet rooms on the other side of the main stair hall are a not unattractive feature of the design of the front elevation; they tend rather to give scale to the larger and more important windows. The octagonal window with its heavy trim gives the needed note of formality to the gable over the entrance door. This window serves to light the upper landing of the main stairway. The first floor is conveniently arranged with a coat room, lavatory and corner study at the front of the house, and a large living room, living porch and dining room at the rear. One of these illustrations indicates the clever way in which the sleeping porch has been made an integral part of the design of the house through the use of coinciding roof slopes. The high steep roof of this house makes possible additional rooms of excellent size on the third floor, which are reached by the servants' stairway.



ENTRANCE

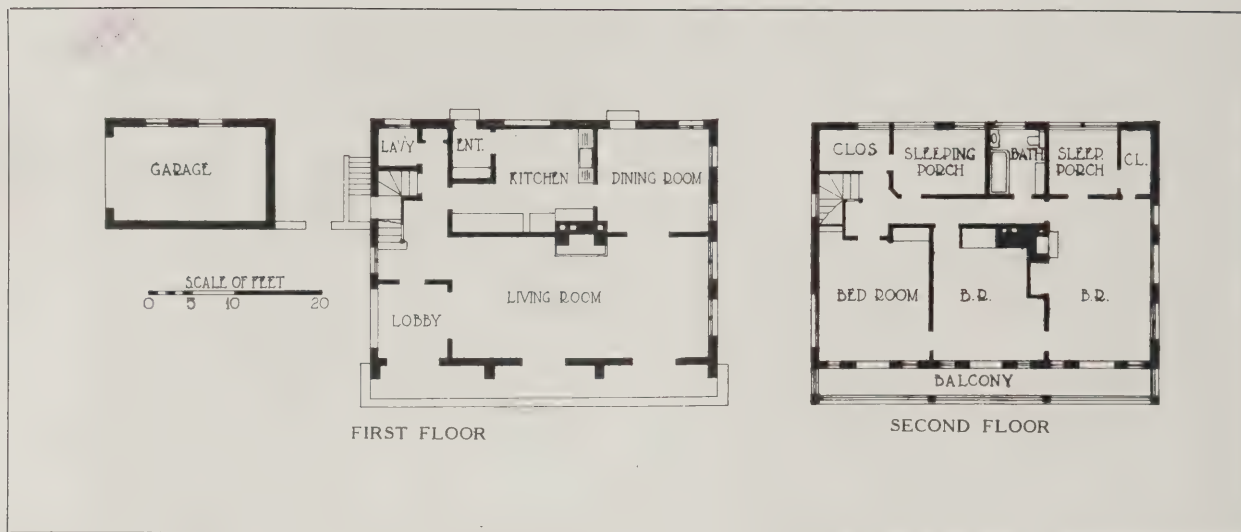


SIDE PORCH



Photos, Theodore M. Fisher

HOUSE OF L. C. PERKINS, ESQ., COLORADO SPRINGS
H. WATTS JOHNSON, ARCHITECT



AT Colorado Springs, H. Watts Johnson, Architect, completed a year ago a house of bold and interesting design, which suggests the Swiss chalet in its massiveness of construction and its second-story balcony, over which one side of the high hip roof slopes. Natural field stone varying in color and texture has been used for the exterior walls. Heavy piers and brackets of stone support the reinforced concrete and stone balcony across the front. The plan of the first story shows a simple arrangement of an oblong living room with dining room and kitchen at the rear. The stonework of the house is extended out through a short wall with a gate to a stone garage, which in reality is located at right angles to the axis of the main house instead of being parallel with it, as is shown on the plan. The

advantage of this change in location of the garage is found in the added accessibility derived from this arrangement. The one large center chimney of the house is so located to serve for the furnace in the basement, for the kitchen range and for the large fireplace in the living room. The principal view is from the living room side of the house. On the rear the hip roof extends down over the first story, which is of stone like the other three sides of the house. A shallow concrete terrace completes the design of the front of the house. Excluding the garage and wall, which cost \$750 additional, the 35,390 cubic feet of this house cost 36 cents per foot. The second floor of the house contains three bedrooms, a bathroom and two sleeping porches. All the bedrooms open upon the narrow balcony across the front.



END ELEVATION

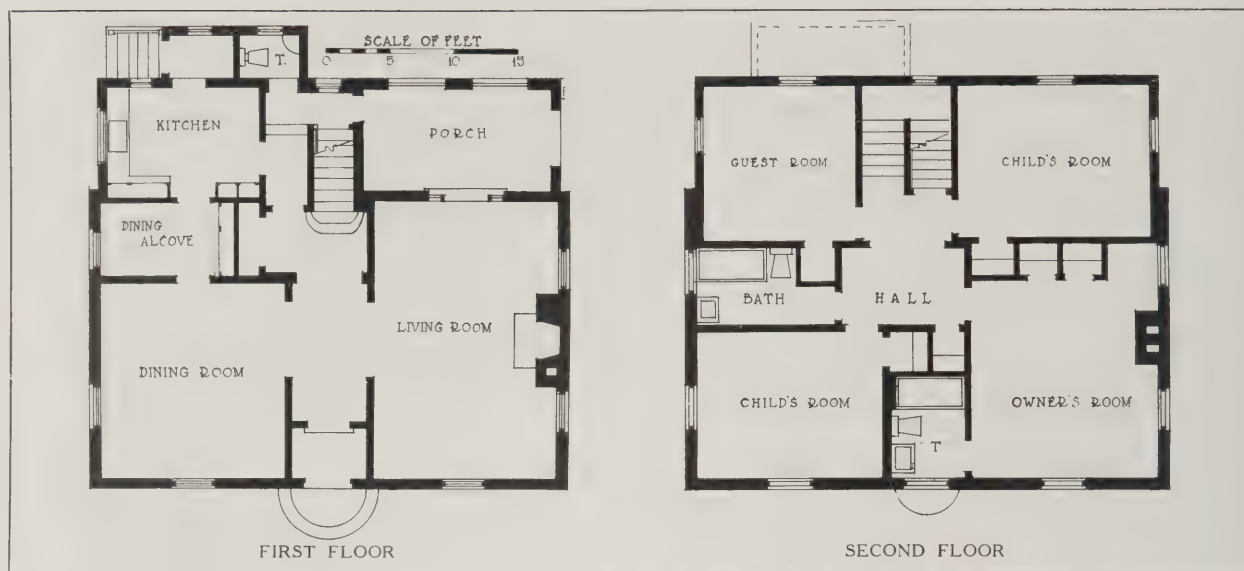


SERVICE ENTRANCE



Photos. Dix Duryea

HOUSE OF STEPHEN PICCHETTO, ESQ., FIELDSTON, N. Y.
DWIGHT JAMES BAUM, ARCHITECT



IN this residence on the outskirts of New York, a happy combination of simple details has produced a delightful result. Despite the perfectly square plan and symmetrical arrangement of doorways and windows, unusual charm is expressed. The architect has studiously avoided elaborate ornamentation which would undoubtedly have detracted materially from the clear, clean simplicity constituting the most admirable feature of this house. Set on the edge of a thick wood, the building stands out sharply against its darker background. In arrangement of rooms

space combined with ease of communication is to be highly commended. Dining room and large living room are to left and right of the entrance hall, with adequate double doorways. Behind the dining room a dining alcove is provided for use for the more informal meals. The kitchen, to the rear of the dining alcove, is lighted by one small window and one of extra large size. A large porch back of the living room gives a pleasant view into the woods. On the second floor, four large light and airy bedrooms are capably served by two baths and five large closets. A stairway leads from this floor to the garret.



ENTRANCE FACADE



MAIN ENTRANCE



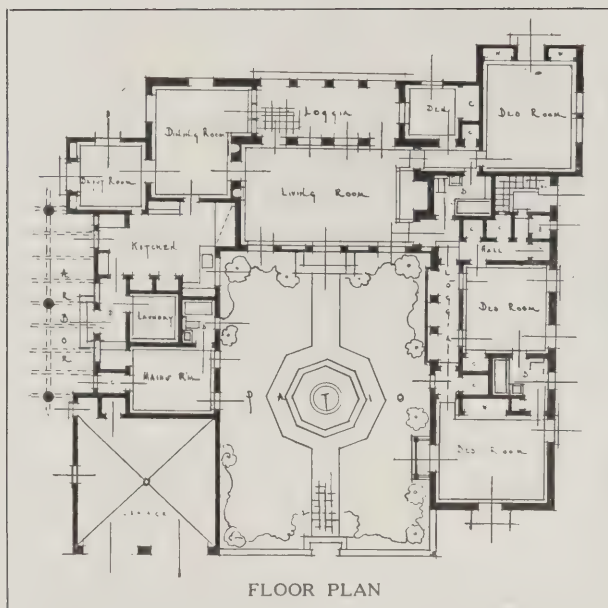
GENERAL VIEW



Photos. Loaned by Rexford Newcomb

TERRACE, HOUSE OF ROY B. WILTSIE, ESQ., LA JOLLA, CALIF.

EDGAR V. ULLRICH, ARCHITECT



OVERLOOKING the Pacific Ocean, near La Jolla, Calif., Edgar V. Ullrich recently completed for Roy B. Wiltsie, Esq., a one-story house in the Spanish style. The consistency and completeness of the Spanish details shown in the design of this charming house make it one of the most interesting examples on the Pacific coast of the use of this style in American domestic architecture. Built around three sides of an open court or patio, the

house is interesting in plan. One side of the open court is enclosed by the bedroom wing of the house, where three large bedrooms and two baths are located. The other side of the court is enclosed by the servants' portion of the house, containing the kitchen, laundry, maid's room and bath, and a large garage. The main part of the house, which encloses the ocean end of the court, contains a large living room, dining room, breakfast room, "den" and arched loggia overlooking the sea. The detail of the entrance door, shown in one illustration below, is typically Spanish in design. Other details which add to the stylistic quality are the wrought iron gates and various grilles, decorative panels in Spanish tile, the low tile-covered roof, and the patio garden with its center fountain. The detail of the garage doors is also worthy of particular notice, as it is typically Spanish in character. The heavy columns and pergola beams of the servants' porch back of the garage are other well studied details.

This long, low type of house is particularly appropriate for a location overlooking the water. Its horizontal lines repeat in a way the lines of the sea itself, and produce a feeling of a closeness to the ground, which makes the place appear homelike and comfortable. Viewed from either the highroad or the sea, the house has unusual attraction. The living loggia with its four arches pleasantly breaks the ocean facade of the building. The severity of this facade is broken by the projection at one end.



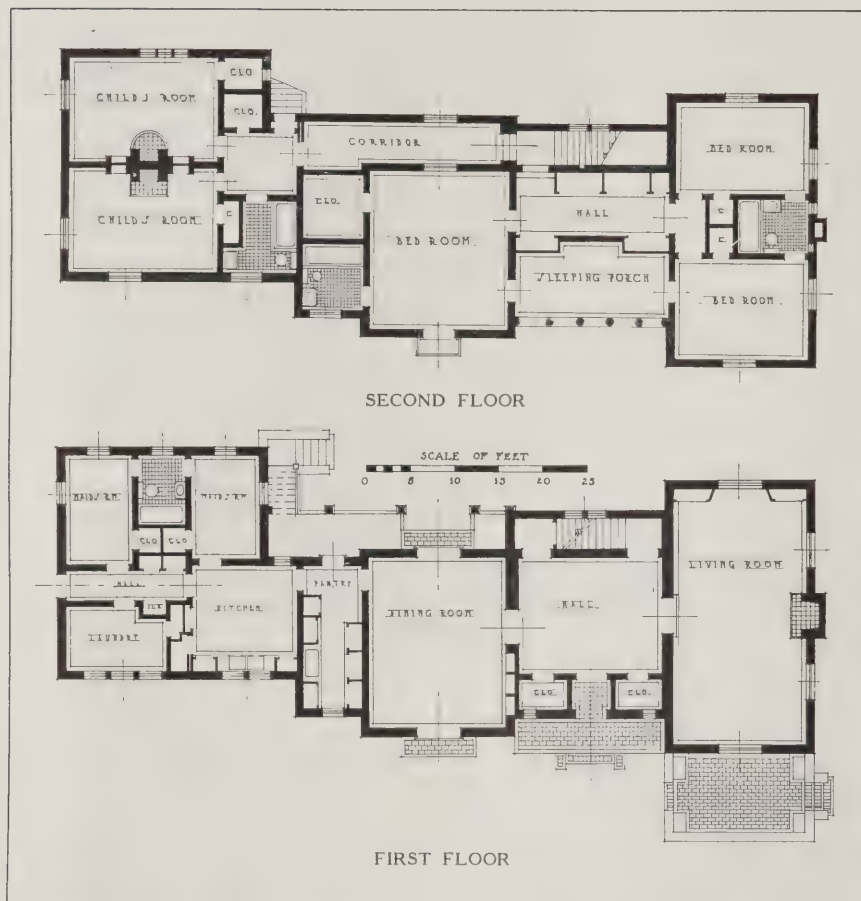
ENTRANCE FROM PATIO



ENTRANCE GATE



HOUSE OF CLINTON G. ABBOTT, ESQ., SAN DIEGO
WILLIAM TEMPLETON JOHNSON, ARCHITECT



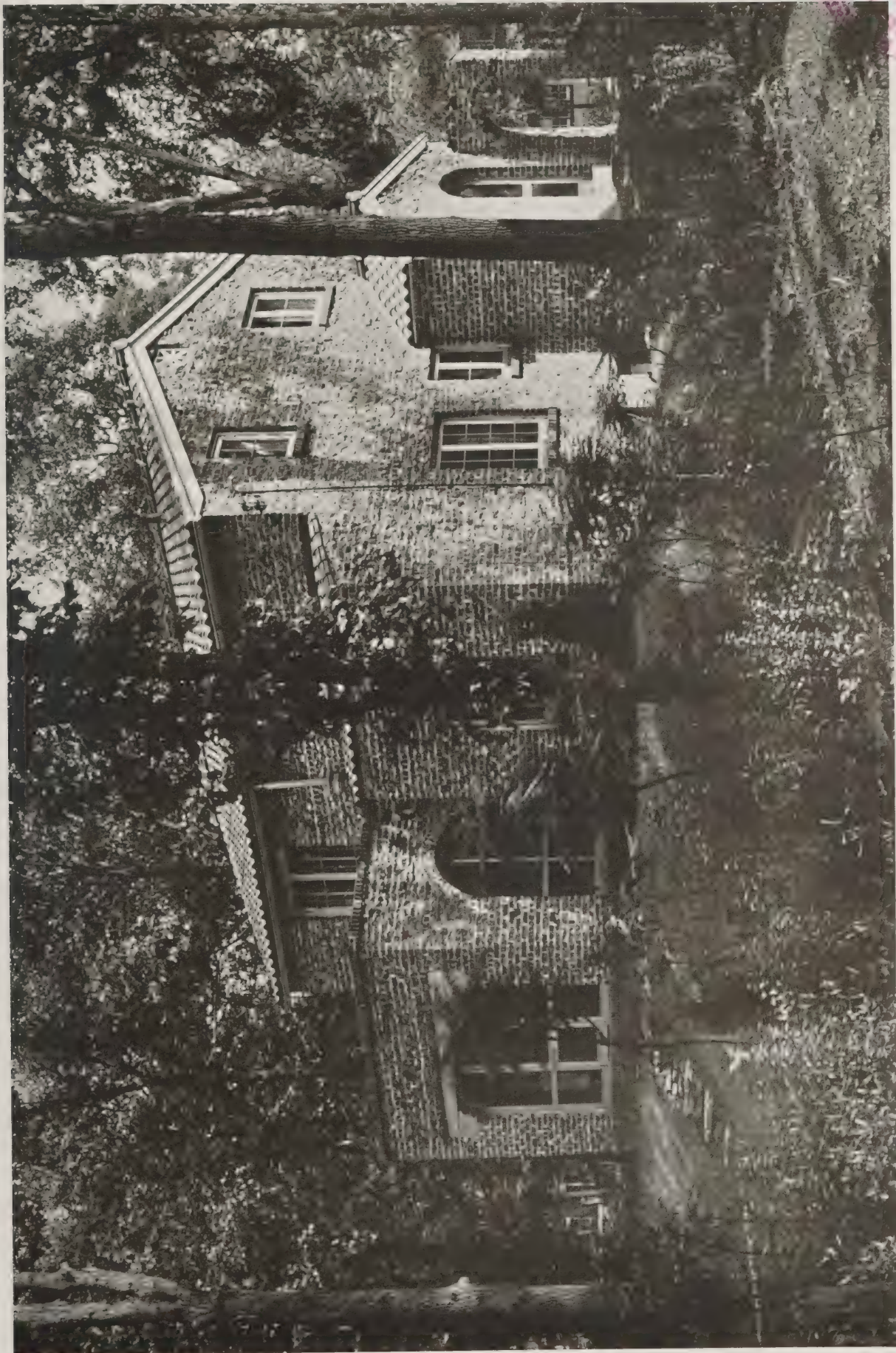
AMONG the many delightful houses in the Italian and Spanish styles found on the Pacific coast none is more interesting than this. Only two stories in height, the house is rambling in plan, which adds much to its interest and attractiveness. Walls built of smooth stucco on wire lathing, tinted after the Spanish style, set off well the dark tones of the mission tile roof. A square entrance hall separates the large living room from the dining room, which, in turn, is separated from the kitchen by a good sized pantry. Beyond the kitchen is a laundry and two servants' bedrooms with bath between. Intelligent and appropriate planting has done much to add to the beauty of the surroundings of this house, which while it is not small, is, on the other hand, not a mansion. With a cubic footage of about 60,000, this house cost in 1923 approximately 50 cents per foot.



OUTSIDE STAIRWAY

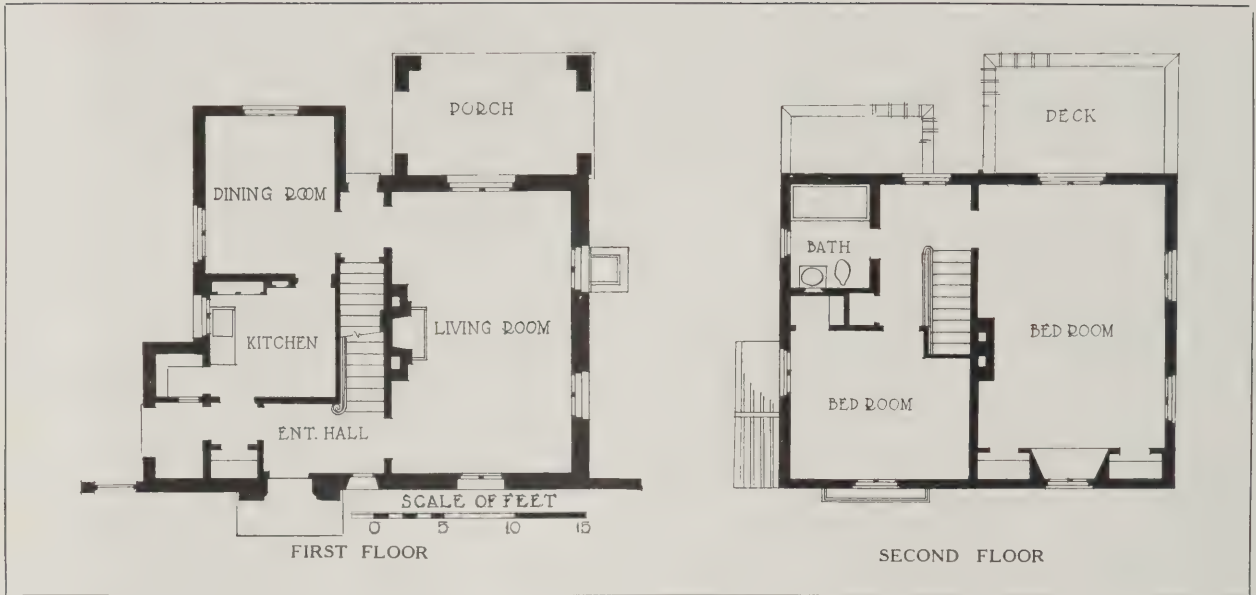


A TERRACE



HOUSE OF CLARENCE FUERMANN, ESQ., EVANSTON, ILL.
ZOOK & McCAUGHEY, ARCHITECTS

Photos, Ivesbridge



SUGGESTING the farmhouse type of northern Italy and southern France, this small house is unique in character because of the use of "skintled" brick and a low, tile-covered roof. The architects, Zook & McCaughey, have succeeded in giving considerable interest to a very simple, square planned house. The principal illustration shows the rear of the house with its large living porch and one-story projection of the dining room. The first floor has a living room, dining room, kitchen and front entrance

hall. The latter connects directly with the kitchen entrance. On the second floor are two large bedrooms and bath. As is the case in most small houses, there is but one chimney, which provides flues for the furnace in the basement and a fireplace in the living room. There is also but one flight of stairs, as this is the type of small house in which it is intended to employ servants who come in by the day. The approximate cubic footage of this house is 18,000, and the cost to build was about 45 cents per foot.



MAIN ENTRANCE

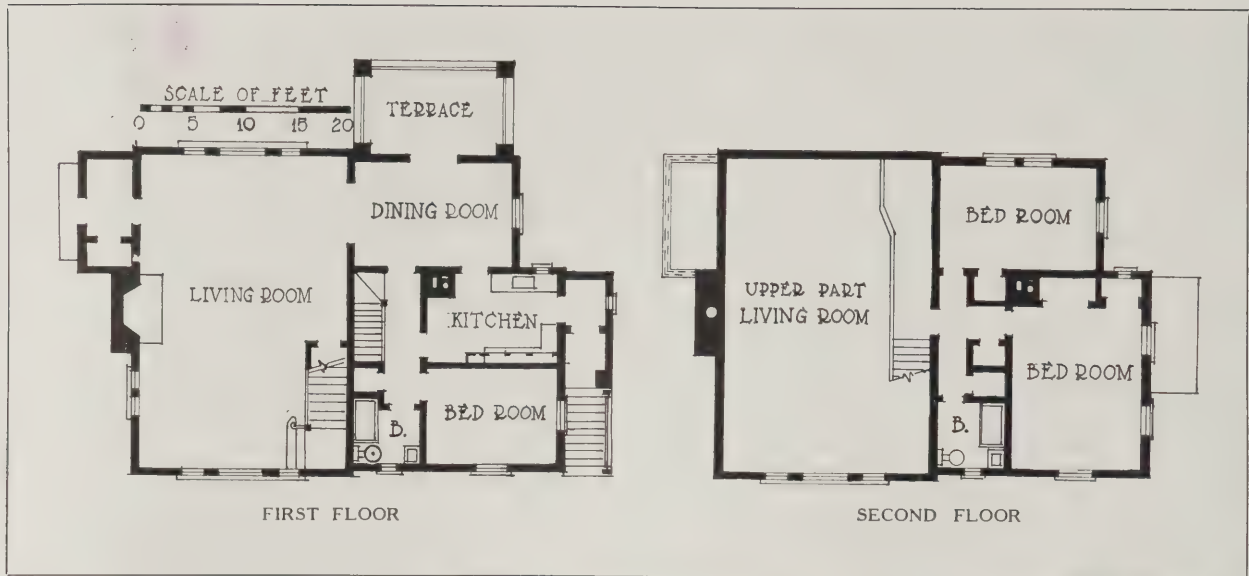


SIDE ENTRANCE



HOUSE OF H. L. TAYLOR, ESQ., RIVERDALE, N. Y.
DWIGHT JAMES BAUM, ARCHITECT

Photos, John Wallace Gillies



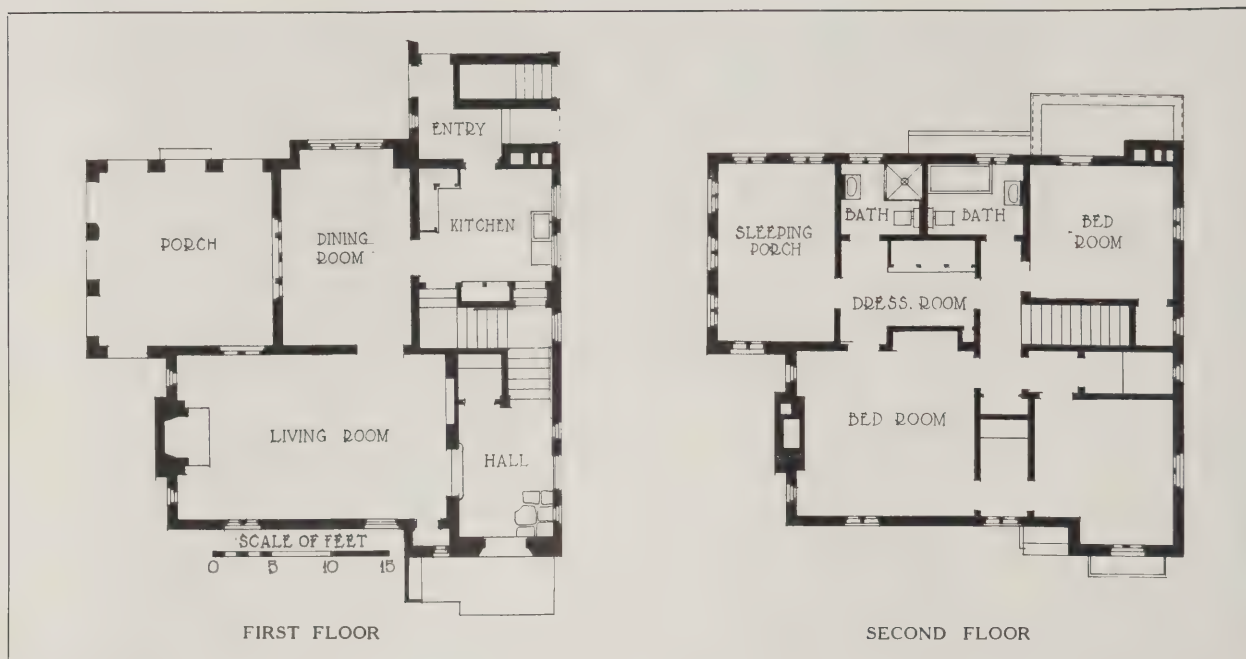
IN quite a different style of architecture from the usual work of Dwight James Baum, and reminiscent of recent small house designs found in California and Florida, is this house of H. L. Taylor at Riverdale. The stucco-covered walls, large projecting chimney and small arched windows remind one of Spanish precedent, while the detail of the entrance door itself suggests Renaissance details found in Italy and England. The entrance door opens directly into a large living room, out of which the stairs ascend to the second floor. This room is well lighted by a large Palladian window at each end. Beyond the living room is a small dining room, off of which opens a covered porch. A sharp fall in grade between the front and the back of the house makes possible a high and light cellar. Iron balconies protect each of the Palladian windows, which run to the floor of the living room. Back of the living room and connecting with the dining room are located a kitchen, servants' stair hall, servants' bedrooms and bath. As the living room is two stories in height, there is a second floor only at the rear of the building. This house, which contains approximately 43,000 cubic feet, was built in 1922 at a cost of not far from 42 cents per cubic foot.



ENTRANCE



HOUSE OF FRED GREEN, ESQ., DENVER
W. E. & A. A. FISHER, ARCHITECTS



IT is interesting to find in Denver and Colorado Springs many examples of small houses deriving their design from Spanish or Italian inspiration and precedent. Among these houses is that in Denver built for Fred Green, Esq., by W. E. & A. A. Fisher, Architects. The general character and detail of this small house suggest Italian rather than Spanish influence. Rough stucco is used for the exterior walls of the house, which is consistently roofed with Spanish tile in dark tones. The windows are well proportioned and excellently spaced.

The plan is interesting and well studied, showing on the first floor a good sized living room opening at the rear into a dining room and large living porch. Beyond the dining room is a kitchen and service entrance. A single flight of stairs is accessible from both the front hall and the kitchen. The second story shows three bedrooms, a dressing room, sleeping porch and two baths, all these rooms, on both floors, being of fair dimensions. Containing approximately 37,000 cubic feet, this house was built two years ago at a cost of about 47 cents per foot.



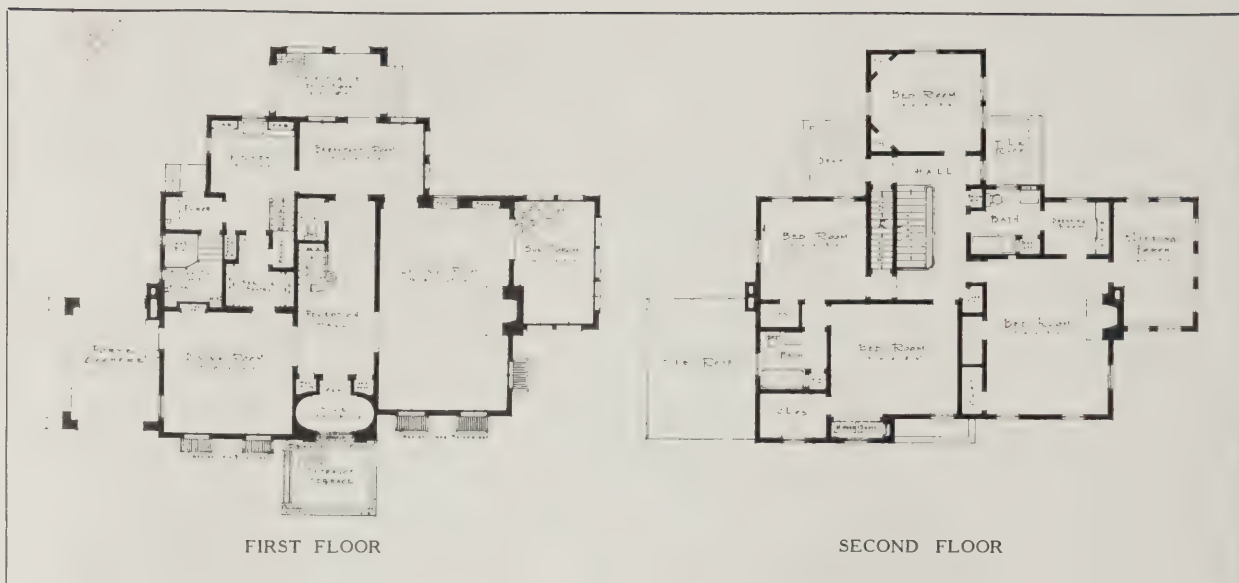
GARDEN FACADE



MAIN ENTRANCE



HOUSE OF GEORGE DORRANCE, ESQ., HOUSTON, TEX.
JOSEPH W. NORTROP, JR., ARCHITECT



IN Houston, Tex., a suggestion of Spanish inspiration is found in a house built by Joseph W. Northrop, Jr., for George Dorrance, Esq. This inspiration is largely evidenced by the overhanging tile roof, the tile-capped chimneys, and the detail of the entrance door. In general the shape of the house would suggest the use of Georgian, Colonial or French detail, but the design of this house indicates an honest endeavor to express some originality as well as consistency in design. The effect as a whole might have been improved if the two end chimneys could have been wider and with slightly more overhang to their tile caps. The enclosed openings of the sun porch would have been made

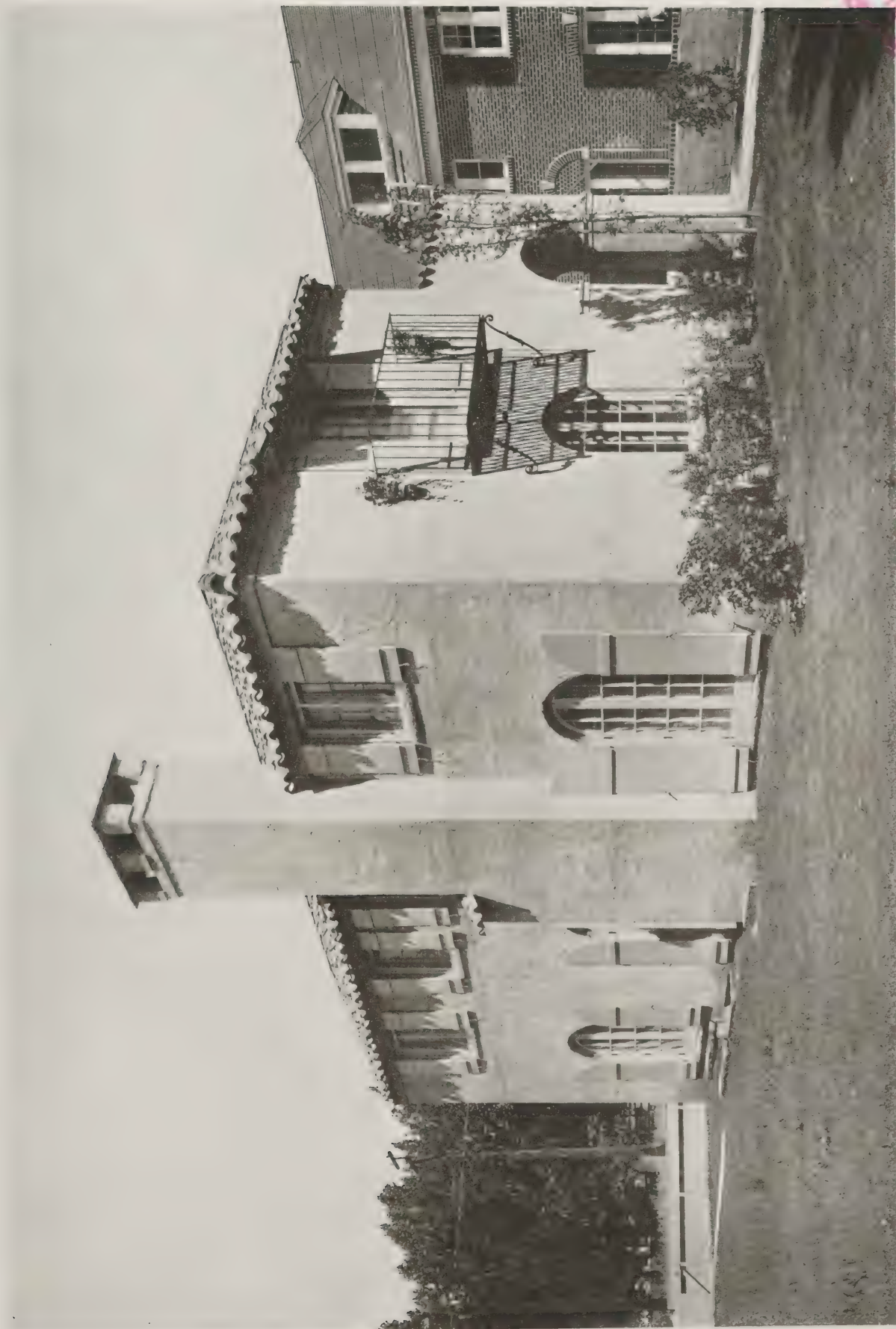
more attractive had they been arched in shape, similar to the driveway arch at the other end of the house, especially as the long casement windows of the first story are arched in effect, although not in reality. The plan of the house is simple and direct and unusual in no respect save for the fact that as the house has no cellar, the boiler room is located back of the dining room. In order to give this room proper depth for the hot water pipes which connect with the radiators on the first floor, this room is located five steps below the level of the first story. Completed in September, 1924, this house containing approximately 46,000 cubic feet, was built at a cost of a little more than 52 cents per foot.



VIEW IN STAIR HALL



LIVING ROOM FIREPLACE



Photos. Hyckell

HOUSE OF W. O. MERRYWEATHER, ESQ., DENVER
M. H. & B. HOYT, ARCHITECTS



LIVING ROOM

THIS small house at Denver is an excellent example of the use of Spanish architecture as inspiration and precedent for a small house. Open archways, tile floors and a vaulted ceiling in the entrance hall are among the details which give a Spanish feeling to the interior design in keeping with the exterior architecture. This house contains about 27,500 cubic feet, and cost about 49 cents per foot.



STAIR HALL



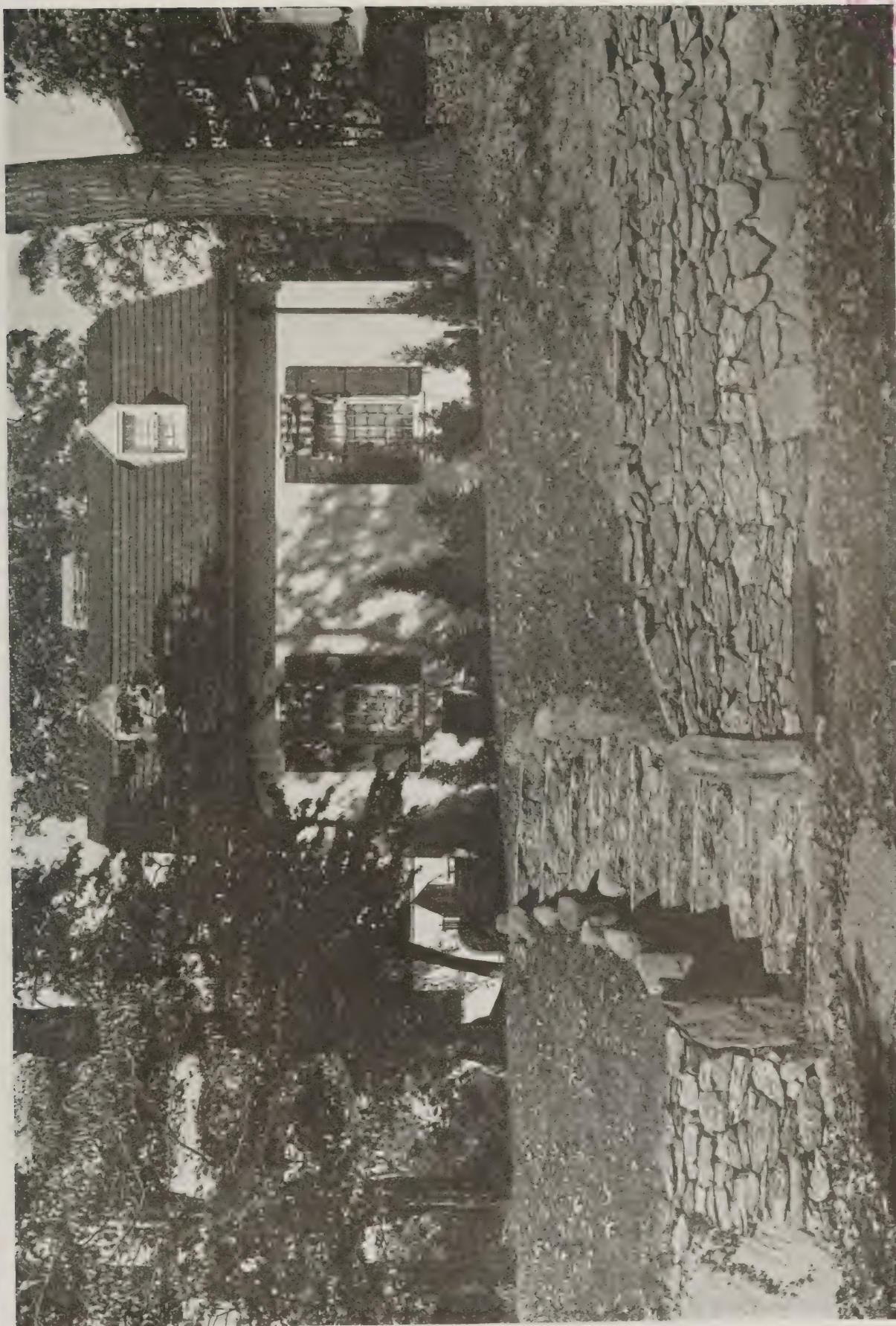
SECOND FLOOR



SCALE OF FEET

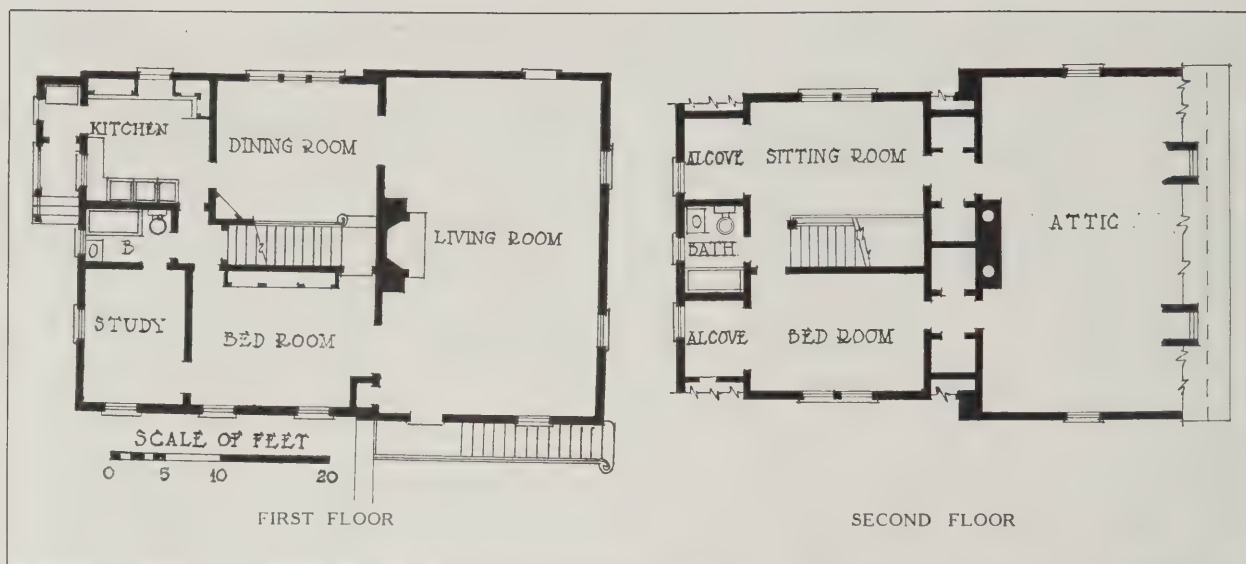
0 5 10 15 20 25

FIRST FLOOR



Photos, John Wallace Gillies

HOUSE OF E. D. WINSLOW, ESQ., RIVERDALE, N. Y.
DWIGHT JAMES BAUM, ARCHITECT



RIVERDALE is fortunate in having so many examples of the work of Dwight James Baum, Architect. Among the smaller houses built by him within the last three years is one belonging to E. D. Winslow, which shows decided originality and charm in its design. Although the house is almost square in shape, in location it is placed endwise to the highroad, with the living room across the end which is well indicated on the road elevation by two finely proportioned and well placed windows. The entrance door, which is reached by a flight of stone steps, is at one end of the living room, into which it opens directly. Back of the living room on one side are a dining room and kitchen, and on the other a bedroom and small study. At the rear of the second floor are the sitting room, bedroom and bath. Built in 1923, this house, containing approximately 41,000 cubic feet, cost 40 cents per foot. The house possesses the distinction found in all of this architect's work.



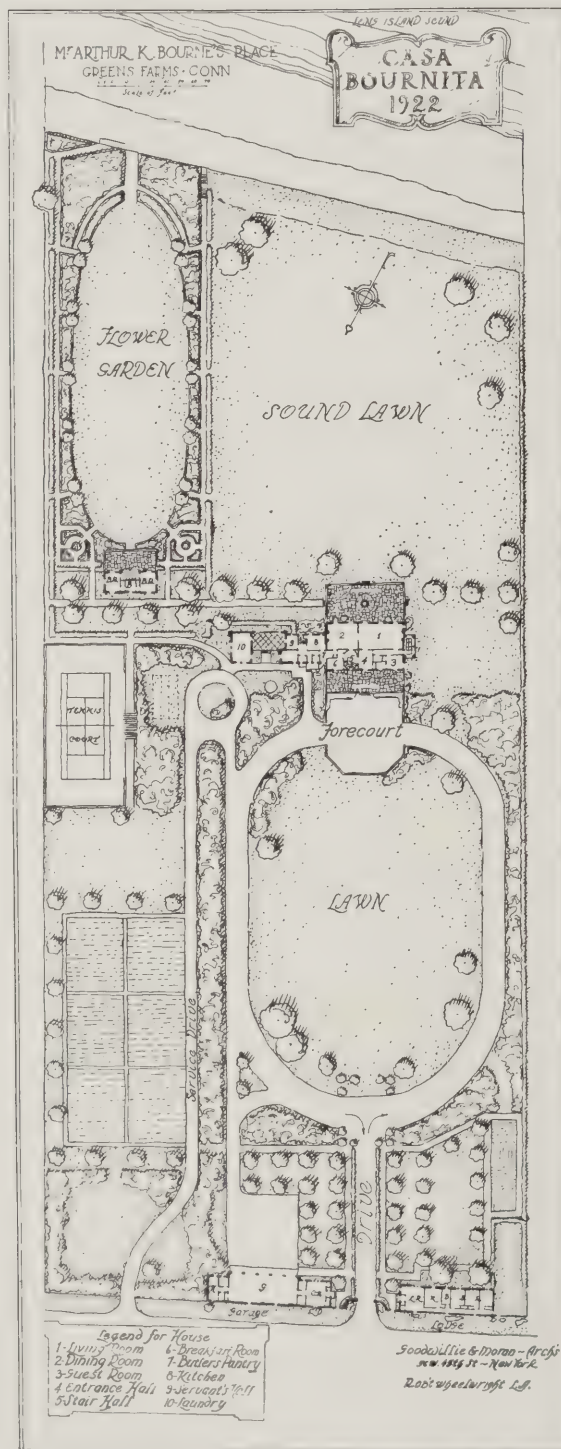
ENTRANCE FACADE



Photos. Dr. J. D. Dwyer

"CASA BOURNITA," HOUSE OF ARTHUR K. BOURNE, ESQ., GREENS FARMS, CONN.
GOODWILLIE & MORAN, ARCHITECTS

Plans on Back

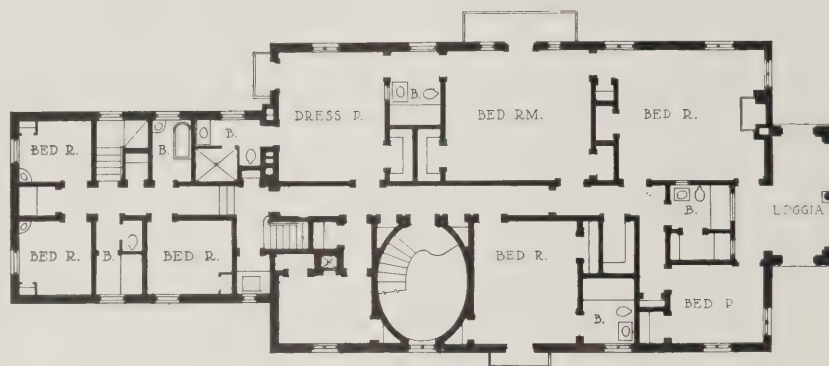


PLOT PLAN OF ENTIRE ESTATE

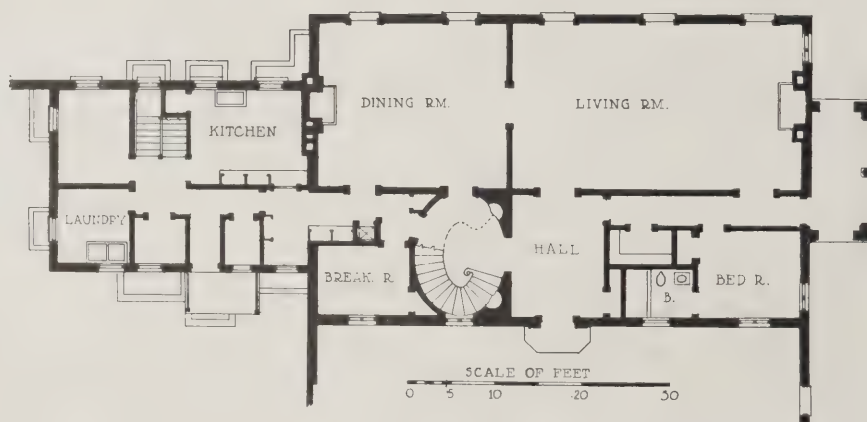


Plans on Back

TERRACE AND GARDEN FACADE, "CASA BOURNITA," GREENS FARMS, CONN.
GOODWILLIE & MORAN, ARCHITECTS



SECOND FLOOR



FIRST FLOOR

PLANS, "CASA BOURNITA," GREENS FARMS, CONN.

GOODWILLIE & MORAN, ARCHITECTS



DETAIL, TERRACE FACADE, "CASA BOURNITA," GREENS FARMS, CONN.
GOODWILLIE & MORAN, ARCHITECTS



FORECOURT AND TERRACE, "CASA BOURNITA," GREENS FARMS, CONN.
GOODWILLIE & MORAN, ARCHITECTS



STAIR HALL, "CASA BOURNITA," GREENS FARMS, CONN.
GOODWILLIE & MORAN, ARCHITECTS



TERRACE



Plans on Back

Photos. John Wallace Gillies

STAIR HALL, HOUSE OF E. R. TROXSELL, ESQ., BRONXVILLE, N. Y.
LEWIS BOWMAN, ARCHITECT



SECOND FLOOR



FIRST FLOOR

PLANS, HOUSE OF E. R. TROXSELL, ESQ., BRONXVILLE, N. Y.
LEWIS BOWMAN, ARCHITECT



ENTRANCE FACADE, HOUSE OF E. R. TROXSELL, ESQ., BRONXVILLE, N. Y.
LEWIS BOWMAN, ARCHITECT



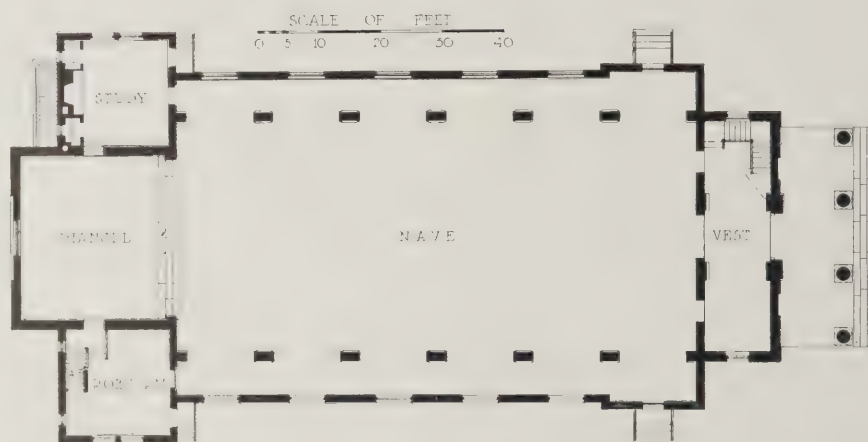
DETAIL OF ENTRANCE; HOUSE OF E. R. TROXSELL, ESQ., BRONXVILLE, N. Y.
LEWIS BOWMAN, ARCHITECT



Photos. John Wallace Gillies

THE VILLAGE CHAPEL, PINEHURST, N. C.
HOBART B. UPJOHN, ARCHITECT

Plan on Back



PLAN, THE VILLAGE CHAPEL, PINEHURST, N. C.

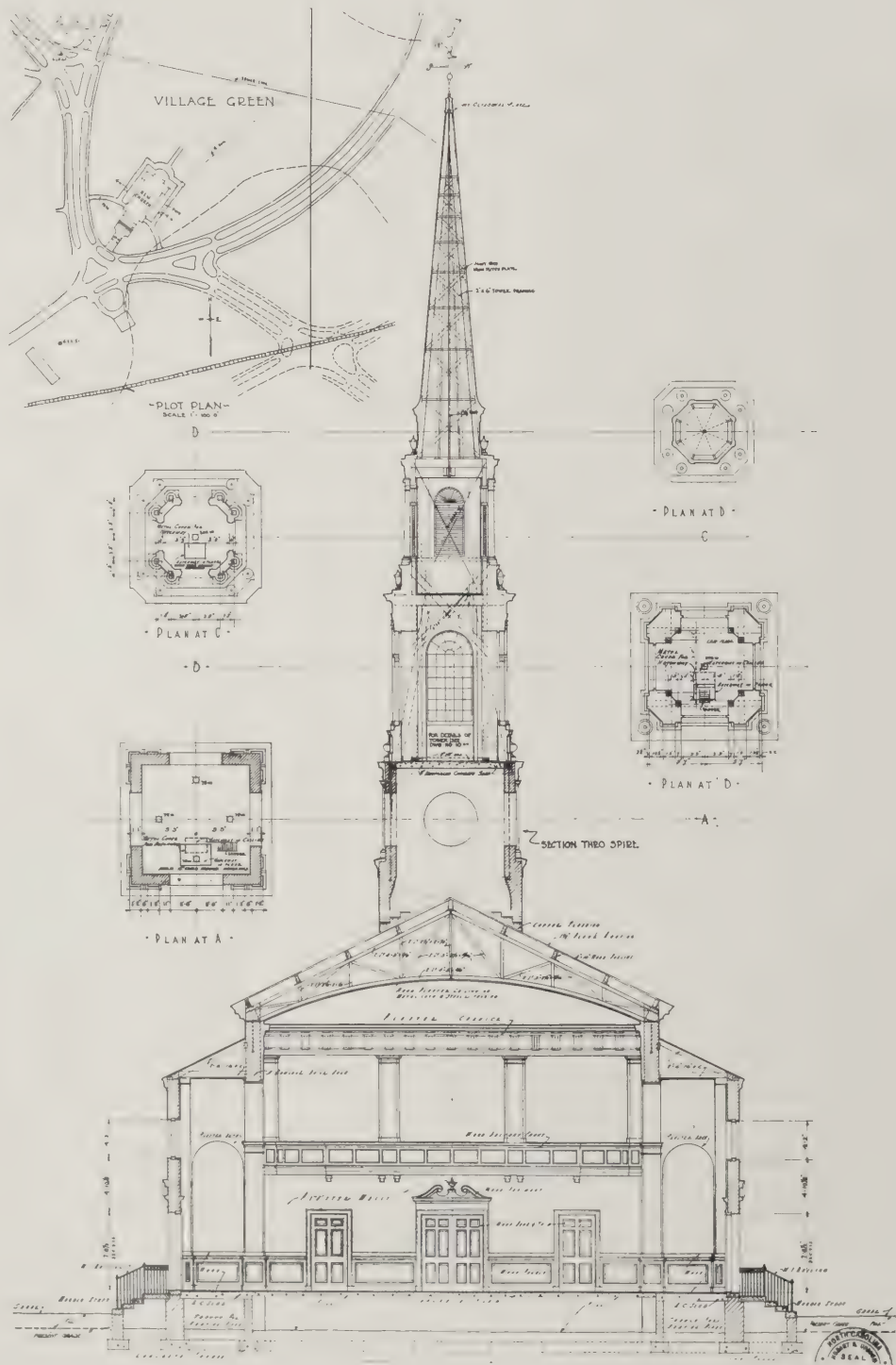
HOBART B. UPJOHN, ARCHITECT



Plot Plan and Sections on Back

ENTRANCE PORTICO, THE VILLAGE CHAPEL, PINEHURST, N. C.

HOBART B. UPJOHN, ARCHITECT



PLOT PLAN AND SECTIONS, THE VILLAGE CHAPEL, PINEHURST, N. C.
HOBART B. UPJOHN, ARCHITECT



Elevation on Back

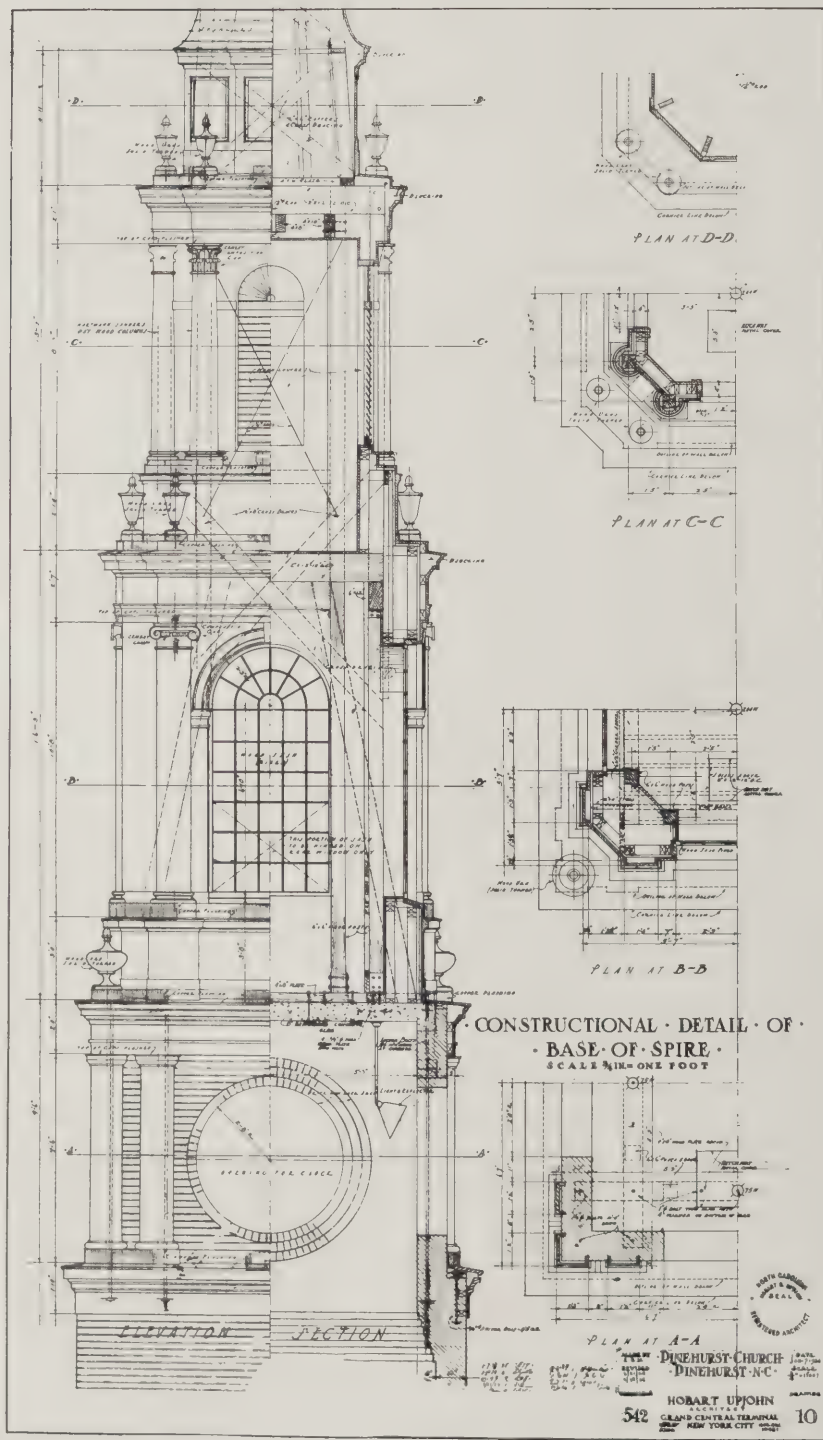
SIDE ENTRANCE, THE VILLAGE CHAPEL, PINEHURST, N. C.

HOBART B. UPJOHN, ARCHITECT



CHANCEL, THE VILLAGE CHAPEL, PINEHURST, N. C.
HOBART B. UPJOHN, ARCHITECT

Details on Back





DETAIL OF CHANCEL; THE VILLAGE CHAPEL, PINEHURST, N. C.
HOBART B. UPJOHN, ARCHITECT



SIDE AISLE: THE VILLAGE CHAPEL, PINEHURST, N. C.
HOBART B. UPJOHN, ARCHITECT



MAIN VESTIBULE DOORWAY; THE VILLAGE CHAPEL, PINEHURST, N. C.
HOBART B. UPJOHN, ARCHITECT



THE NAVE, LOOKING WEST

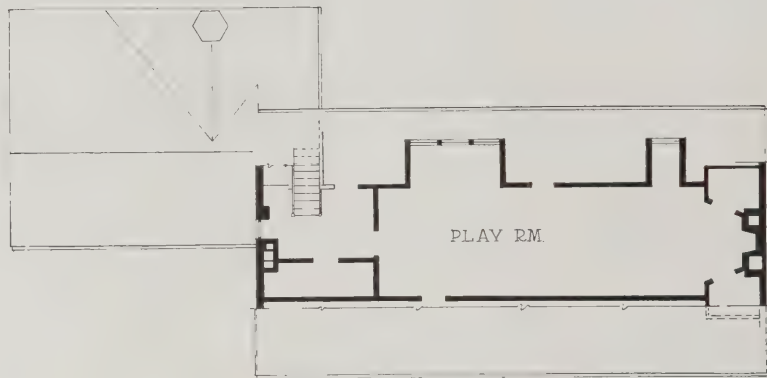


PASTOR'S STUDY; THE VILLAGE CHAPEL, PINEHURST, N. C.
HOBART B. UPJOHN, ARCHITECT

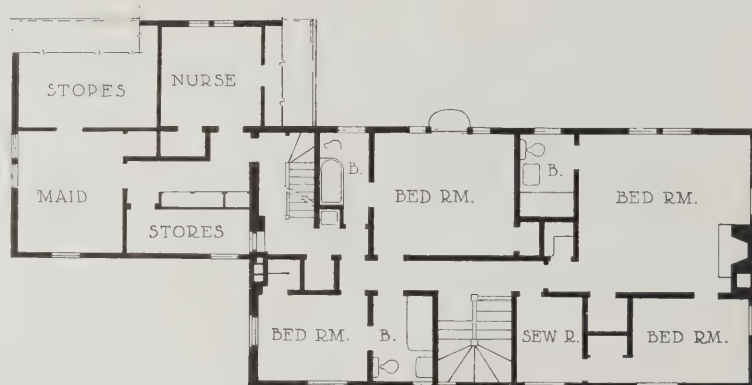


Plans on Back

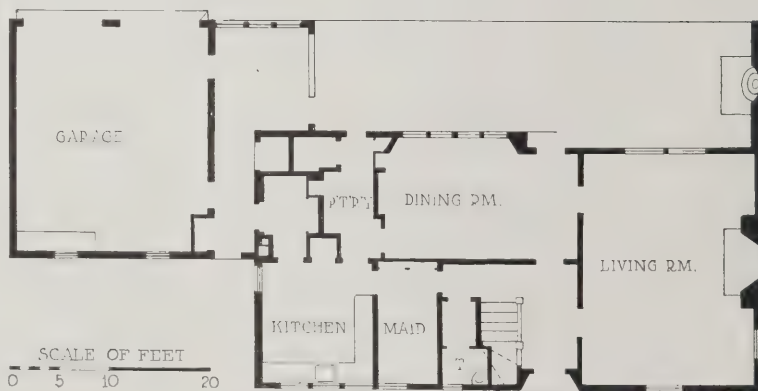
HOUSE OF D. C. PRINCE, ESQ., SCHENECTADY, N. Y.
THOMAS HARLAN ELLETT, ARCHITECT



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

SCALE OF FEET
0 5 10 20

PLANS, HOUSE OF D. C. PRINCE, ESQ., SCHENECTADY, N. Y.

THOMAS HARLAN ELLETT, ARCHITECT



DINING ROOM

HOUSE OF D. C. PRINCE, ESQ., SCHENECTADY, N. Y.

THOMAS HARLAN ELLETT, ARCHITECT



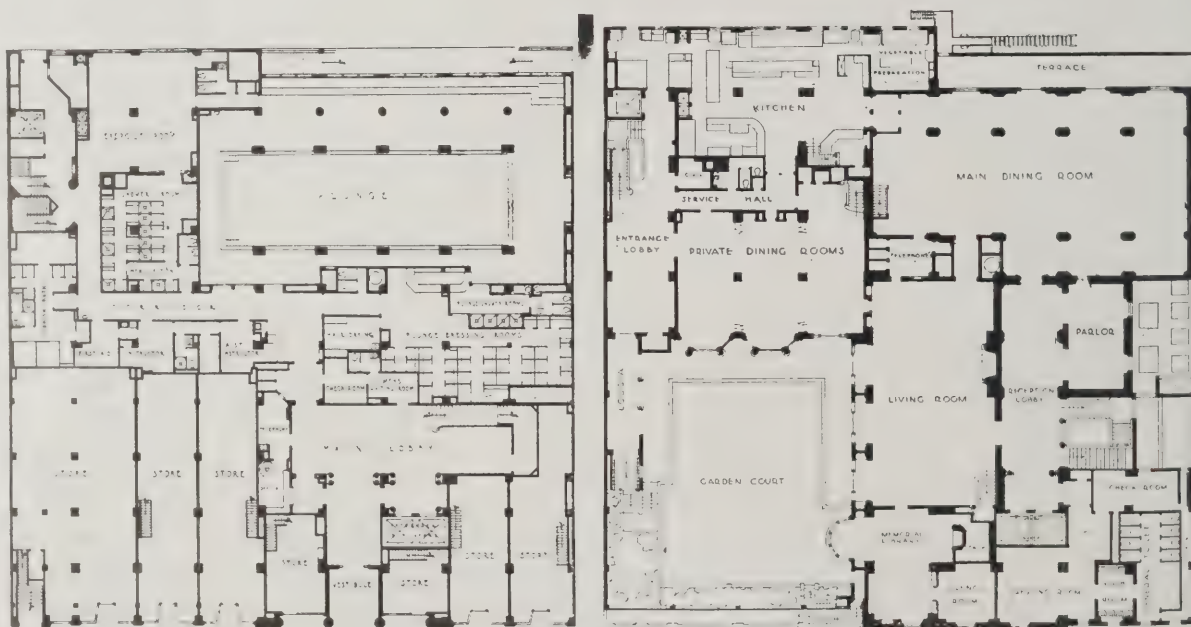
Photos. Margaret Craig

WOMEN'S ATHLETIC CLUB, LOS ANGELES
ALLISON & ALLISON, ARCHITECTS

Plans on Back



A TYPICAL UPPER FLOOR



FIRST FLOOR

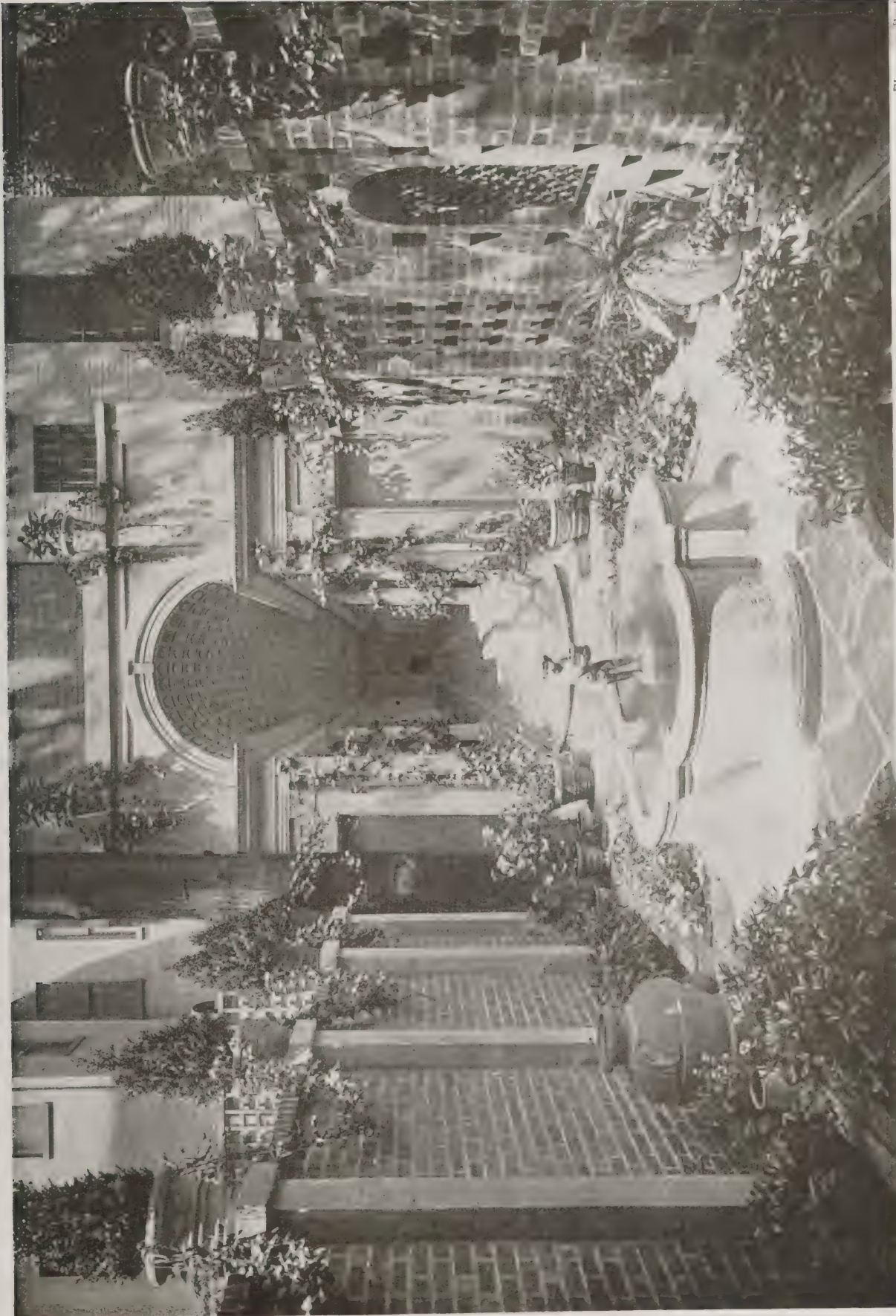
SECOND FLOOR

PLANS, WOMEN'S ATHLETIC CLUB, LOS ANGELES

ALLISON & ALLISON, ARCHITECTS



CORNER OF LIVING ROOM
WOMEN'S ATHLETIC CLUB, LOS ANGELES
ALLISON & ALLISON, ARCHITECTS

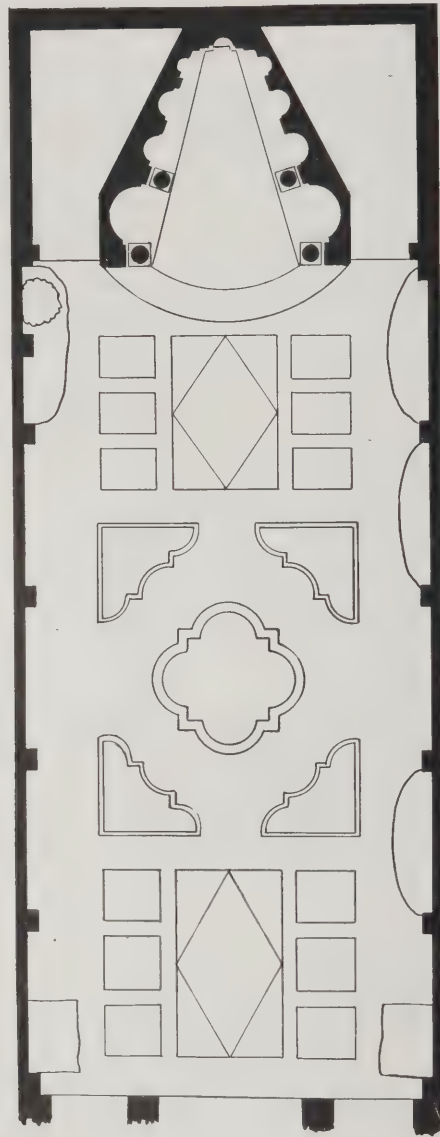


Plans on Page 6

THE GARDEN

HOUSE OF BENJAMIN WOOD, ESQ., NEW YORK
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT

Photos, S. H. Gottsche



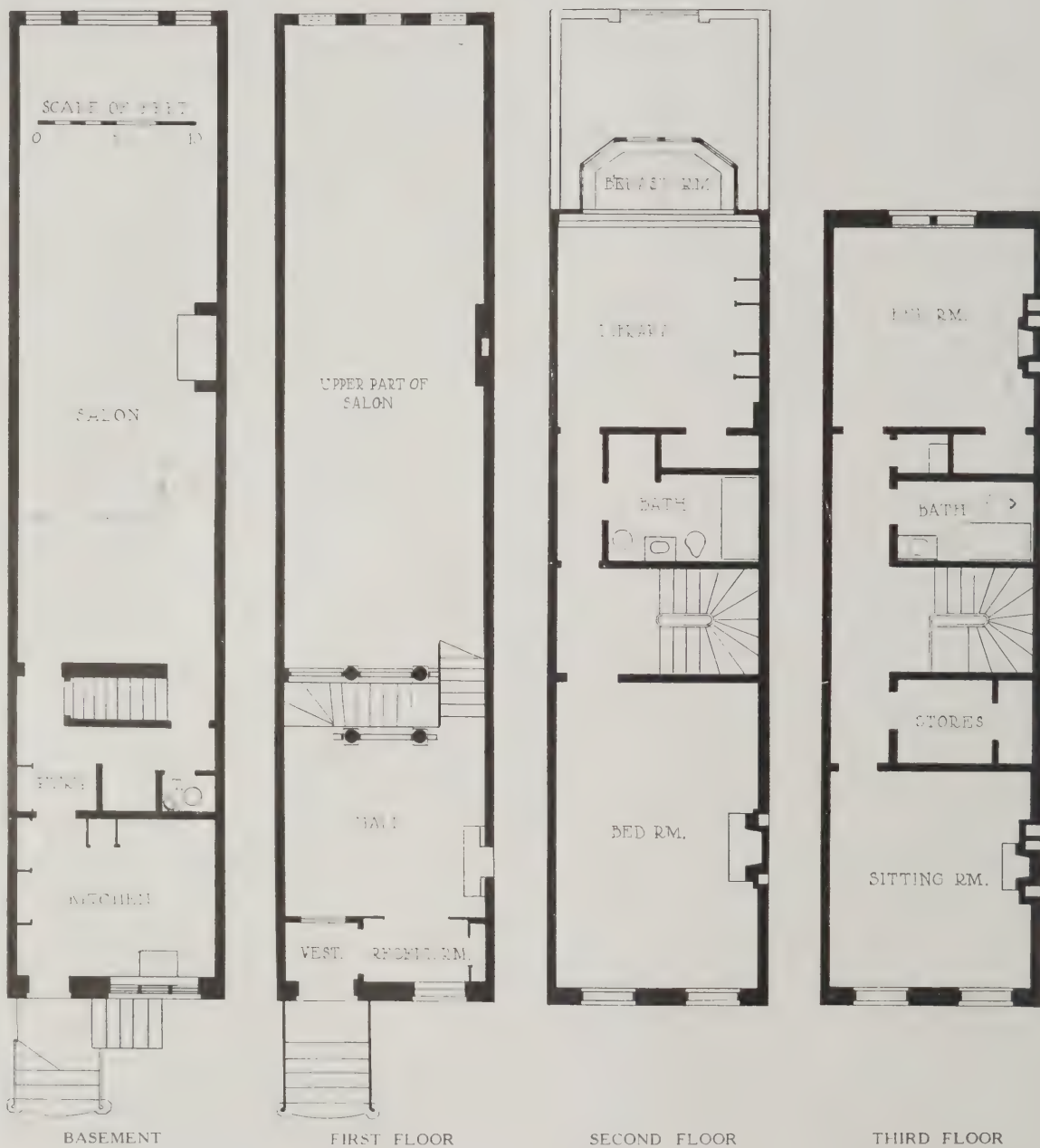
GARDEN PLOT PLAN

HOUSE OF BENJAMIN WOOD, ESQ., NEW YORK

WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT



ONE END OF BREAKFAST ROOM
HOUSE OF BENJAMIN WOOD, ESQ., NEW YORK
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT



PLANS, HOUSE OF BENJAMIN WOOD, ESQ., NEW YORK
 WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT



SALON, HOUSE OF BENJAMIN WOOD, ESQ.
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT



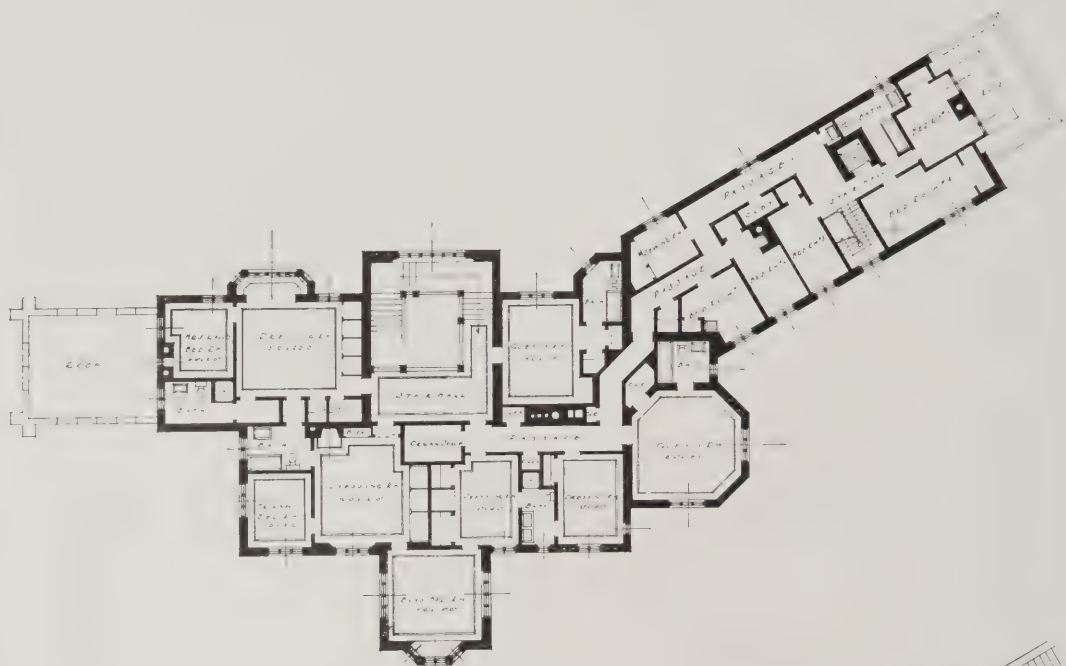
SALON, HOUSE OF BENJAMIN WOOD, ESQ.
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT



Photo. John Wallace Gillies

HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.
DWIGHT JAMES BAUM, ARCHITECT

Plans on Back



SECOND FLOOR



FIRST FLOOR

PLANS, HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.

DWIGHT JAMES BAUM, ARCHITECT



Photo, Paul J. Weber

HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.
DWIGHT JAMES BAUM, ARCHITECT



GARDEN AND GARAGE
HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.
DWIGHT JAMES BAUM, ARCHITECT

Photo, Paul J. Weber



Photo. John Wallace Gillies

THE PORTE-COCHERE

HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.
DWIGHT JAMES BAUM, ARCHITECT



Photos. Paul J. Wicher

GARDEN FACADE



ENTRANCE FROM GARDEN

HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.

DWIGHT JAMES BAUM, ARCHITECT



GATEWAY, GARAGE COURT

HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.

DWIGHT JAMES BAUM, ARCHITECT

Photos Paul J. H'cher



SUN ROOM



SERVANTS' WING

HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.
DWIGHT JAMES BAUM, ARCHITECT

Photos, John H. Wallace Gallies



Photo, John W. Price Gilman

PART OF GARDEN FACADE
HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.
DWIGHT JAMES BAUM, ARCHITECT



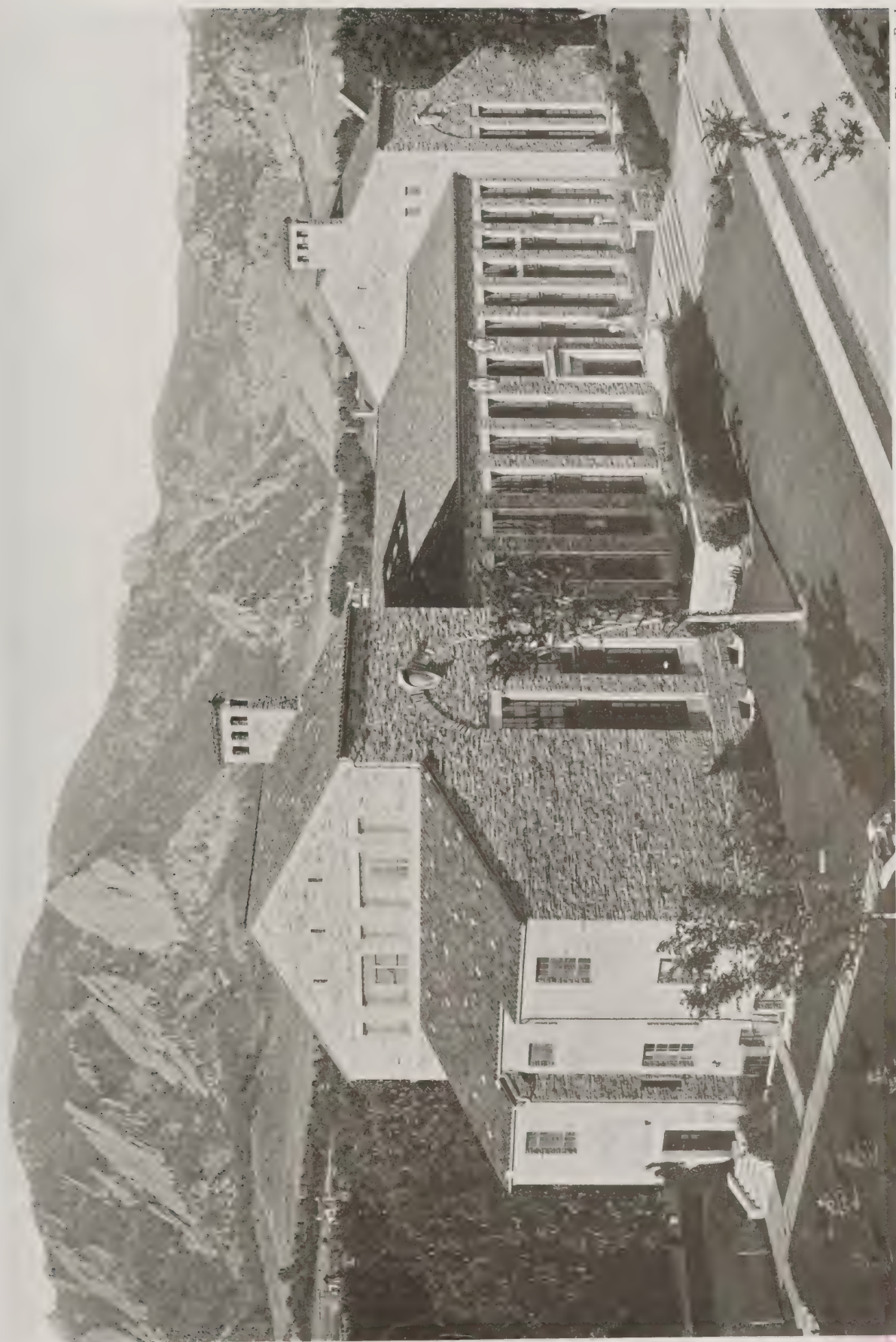
Photo. Paul J. Weber

GARAGE COURT AND ENTRANCE



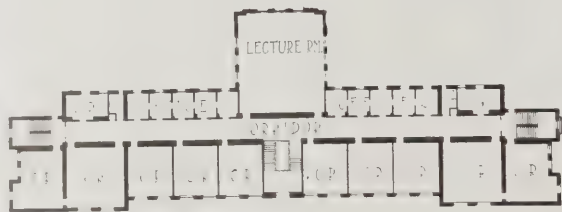
Photo. John Wallace Gillies

GARAGE, FROM GARDEN
HOUSE OF ROBERT LAW, JR., ESQ., PORTCHESTER, N. Y.
DWIGHT JAMES BAUM, ARCHITECT

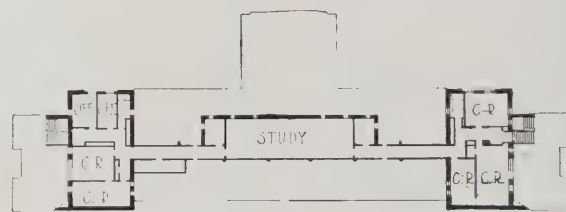


Plans on Back

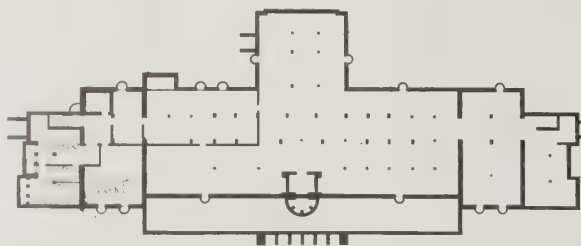
LIBERAL ARTS BUILDING, UNIVERSITY OF COLORADO, BOULDER, COLO.
DAY & KLAUDER, ARCHITECTS



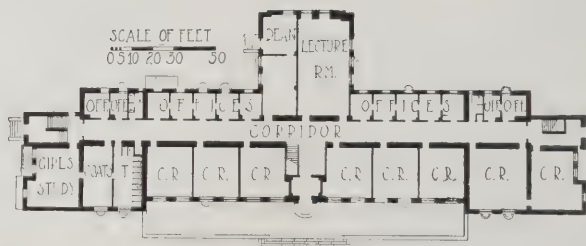
SECOND FLOOR



THIRD FLOOR



BASEMENT



FIRST FLOOR

PLANS, LIBERAL ARTS BUILDING, UNIVERSITY OF COLORADO, BOULDER

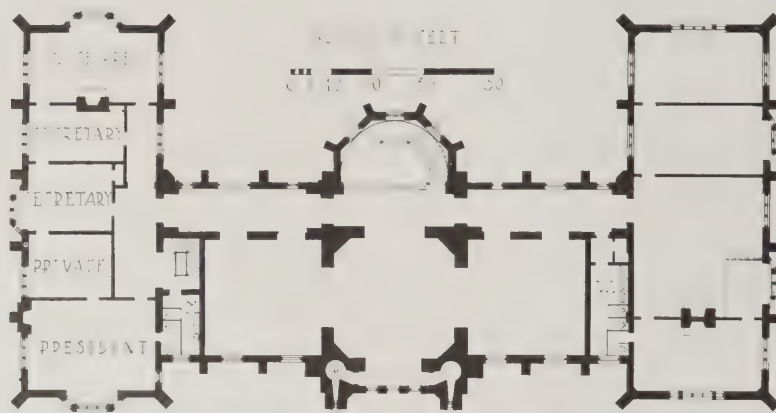
DAY & KLAUDER, ARCHITECTS



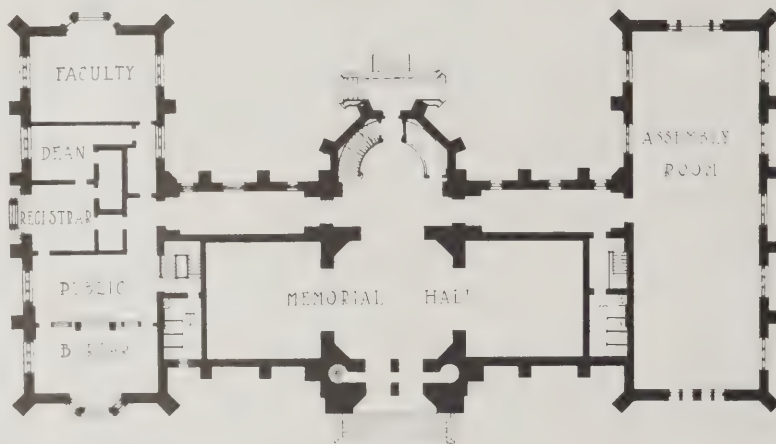
Plans on Back

MEMORIAL BUILDING, LEHIGH UNIVERSITY, LEHIGH, PA.
VISSCHER & BURLEY, ARCHITECTS

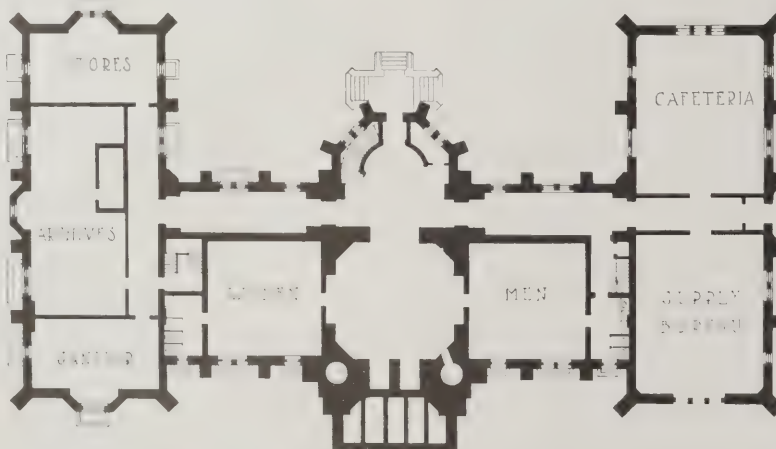
Photo. Dix Duryea



SECOND FLOOR



FIRST FLOOR



BASEMENT

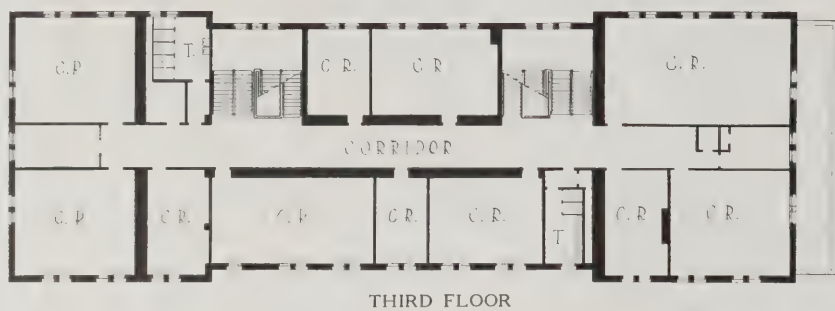
PLANS, MEMORIAL BUILDING, LEHIGH UNIVERSITY, LEHIGH, PA.

VISSCHER & BURLEY, ARCHITECTS

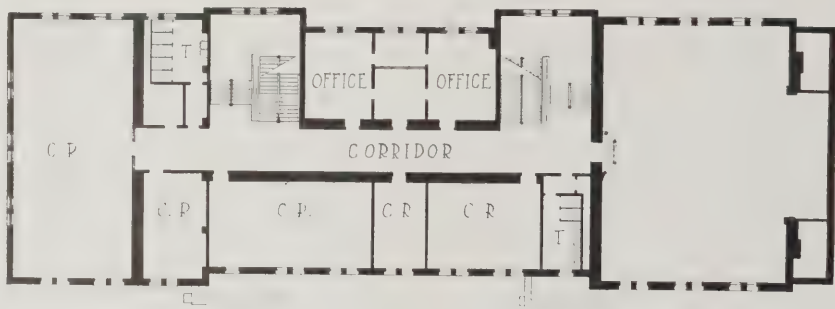


Plans on Back

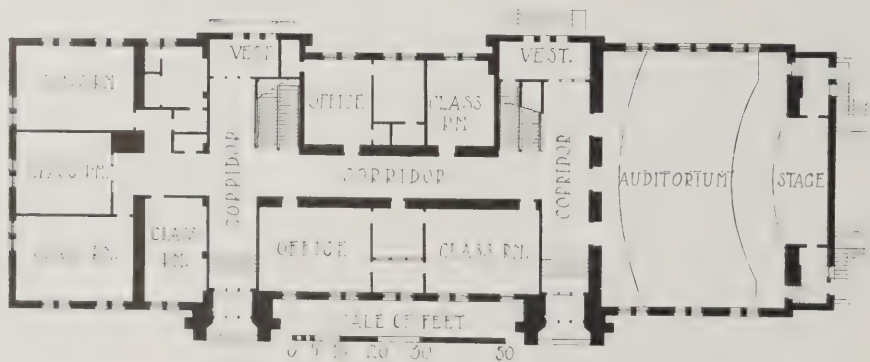
SCHOOL OF COMMERCE BUILDING, INDIANA UNIVERSITY, BLOOMINGTON, IND.
ROBERT FROST DAGGETT, ARCHITECT



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

PLANS, SCHOOL OF COMMERCE BUILDING, INDIANA UNIVERSITY, BLOOMINGTON, IND.

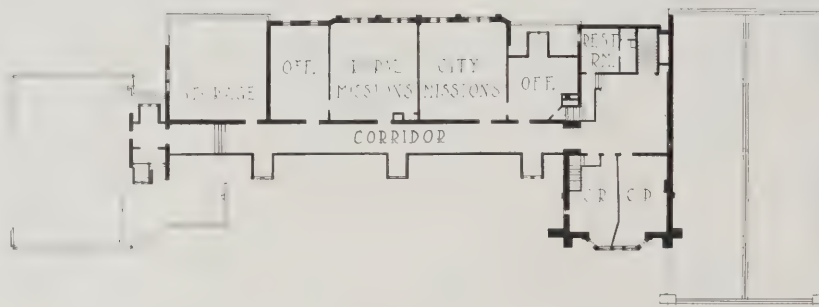
ROBERT FROST DAGGETT, ARCHITECT



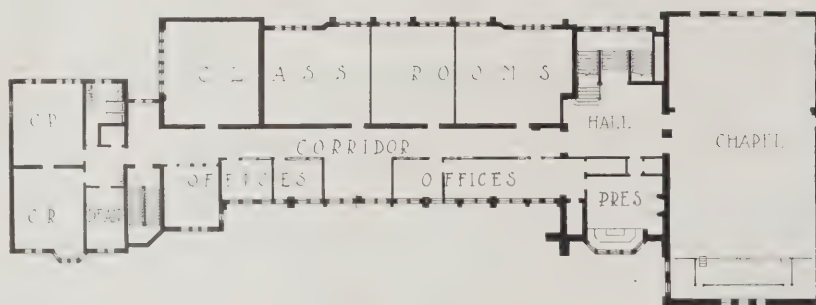
Photo. Tebbes & Knoll, Inc.

GARRETT BIBLICAL INSTITUTE, EVANSTON, ILL.
HOLABIRD & ROCHE, ARCHITECTS

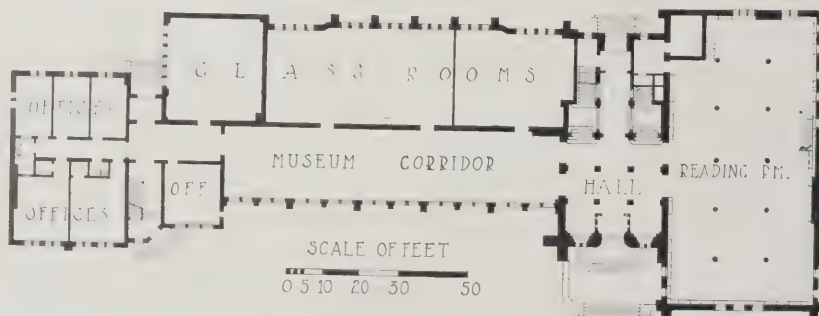
Plans on Back



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

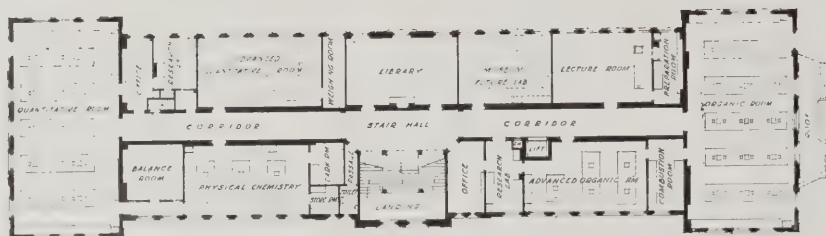
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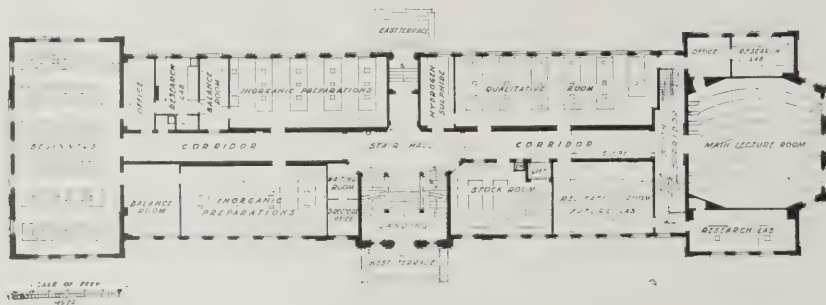


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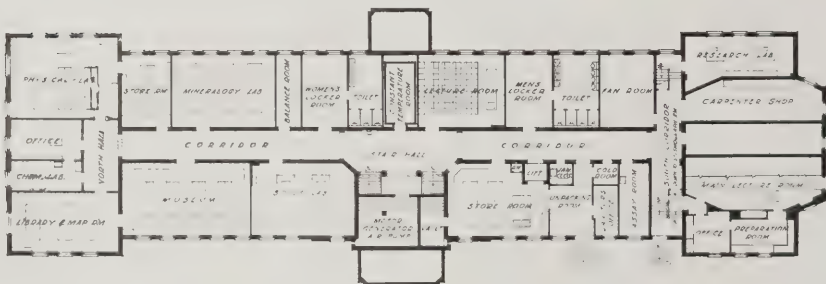
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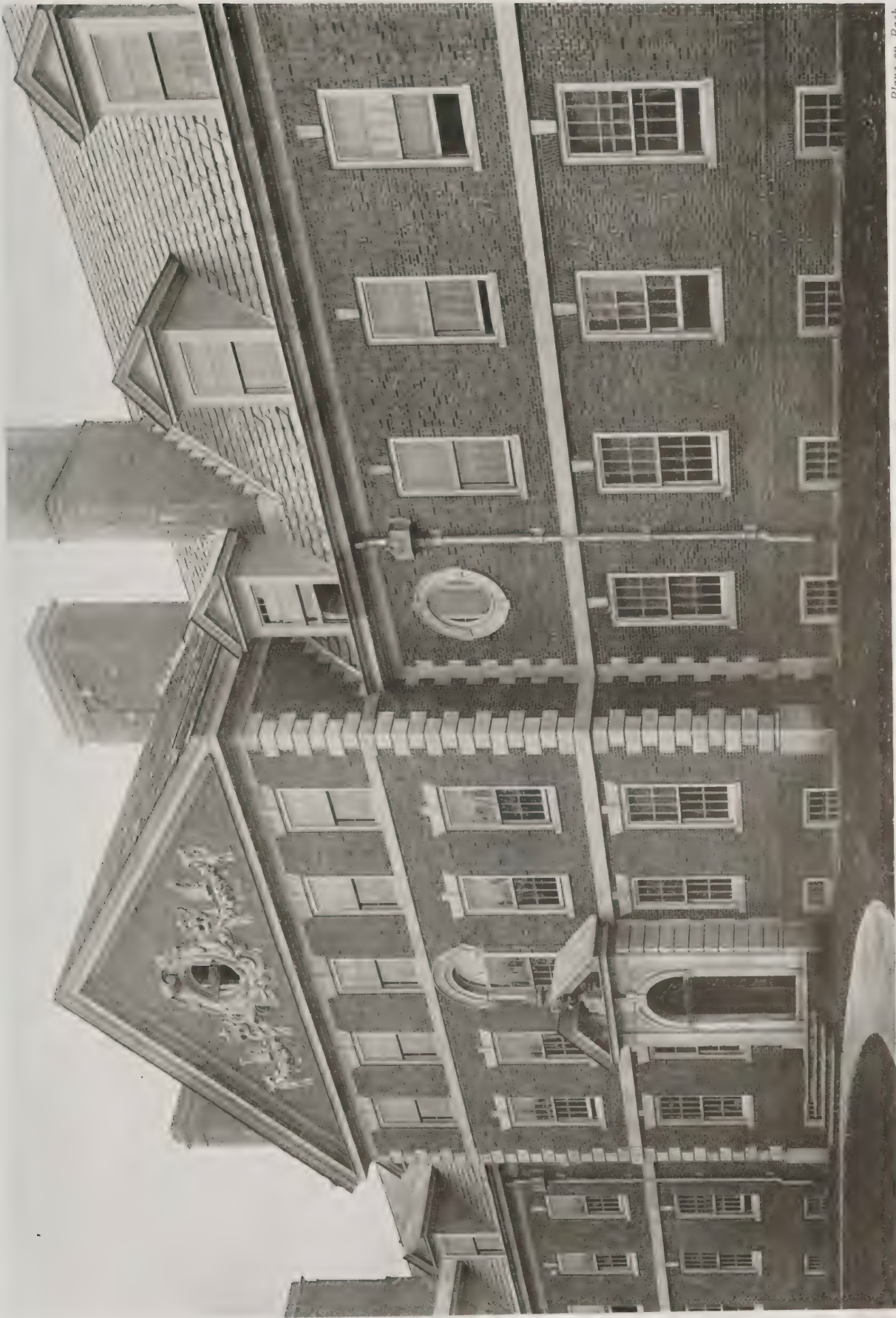
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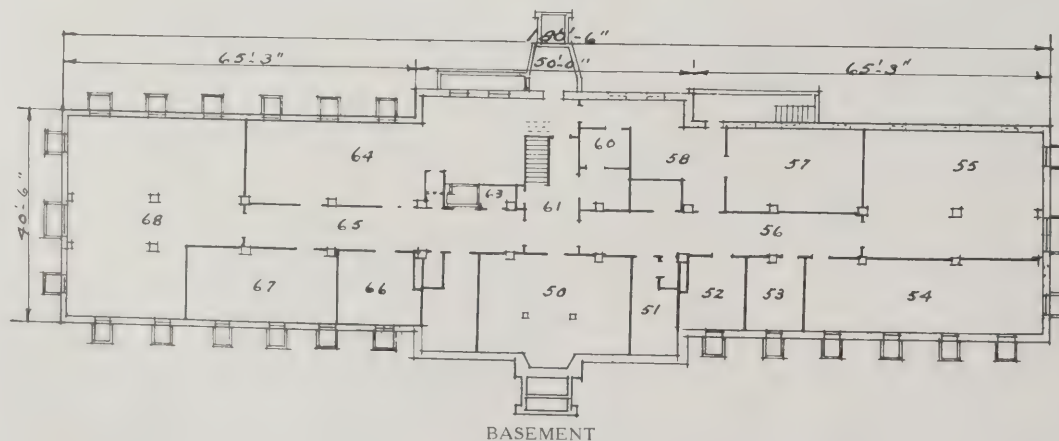
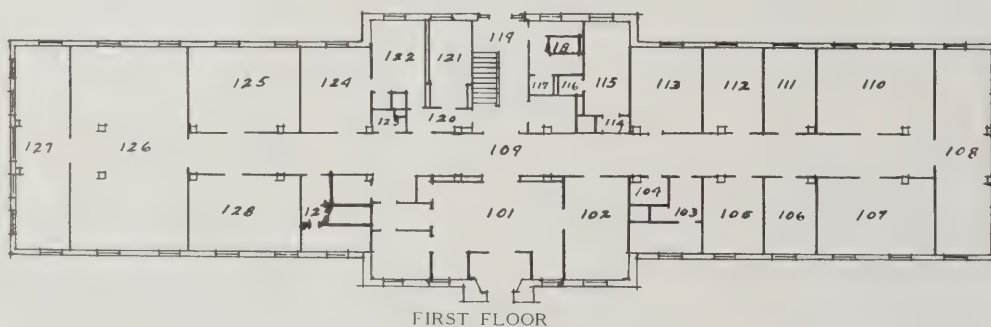
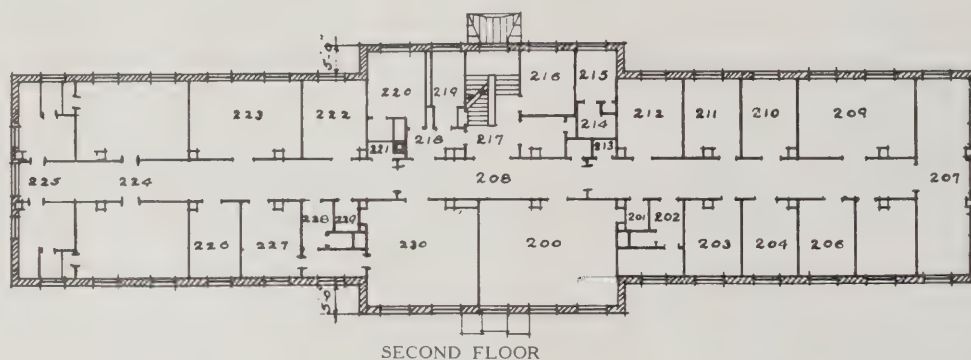
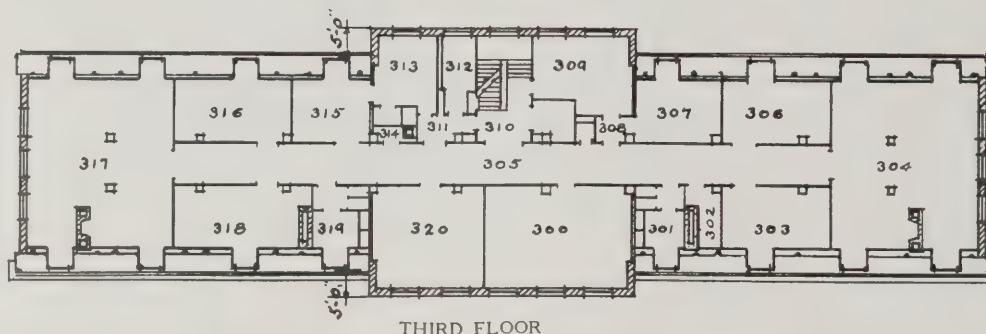
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JAMIESON & SPEARL, ARCHITECTS



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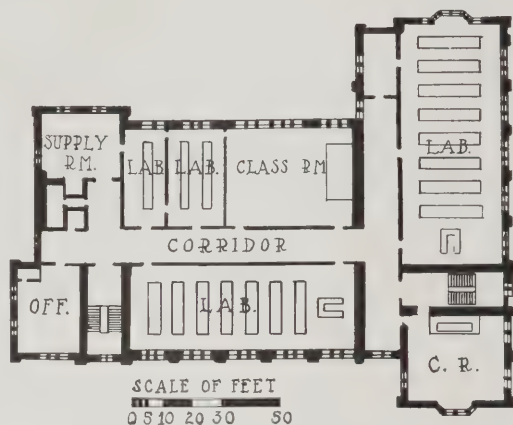
CHARLES A. PLATT AND JAMES M. WHITE, ASSOCIATED ARCHITECTS



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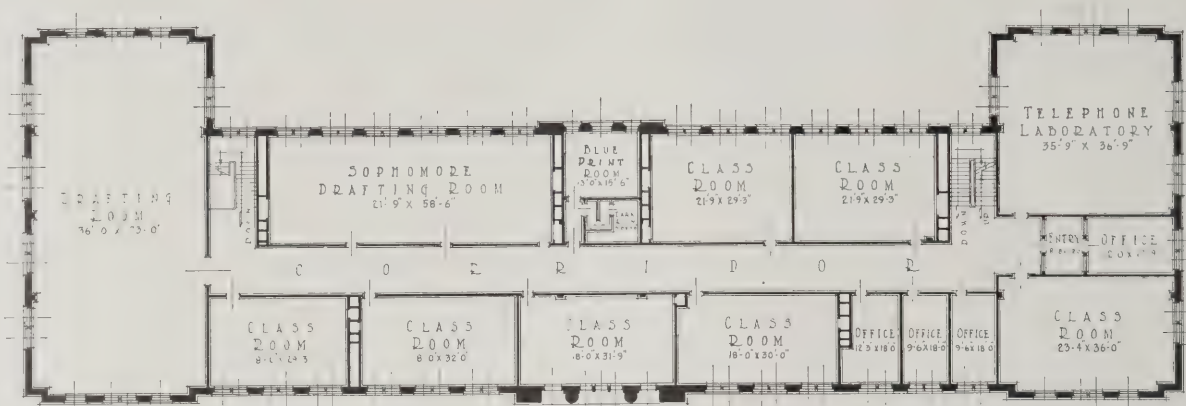


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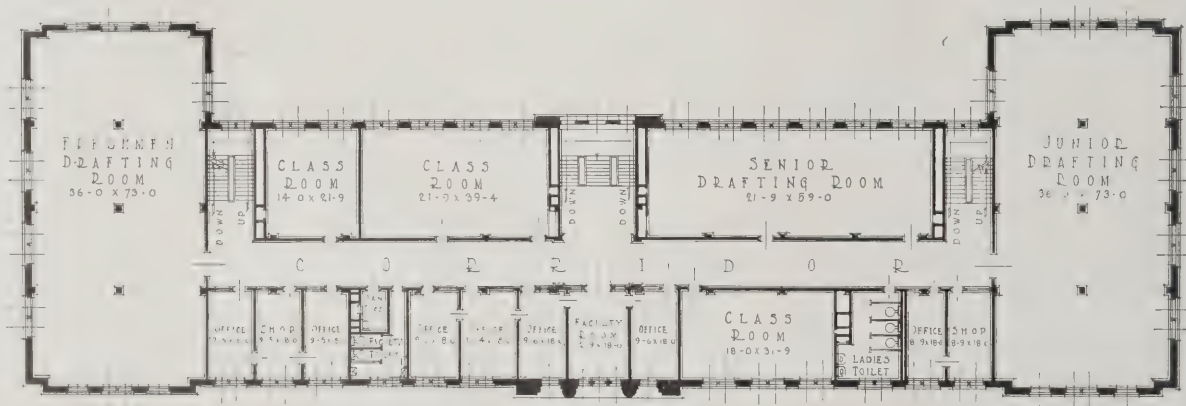
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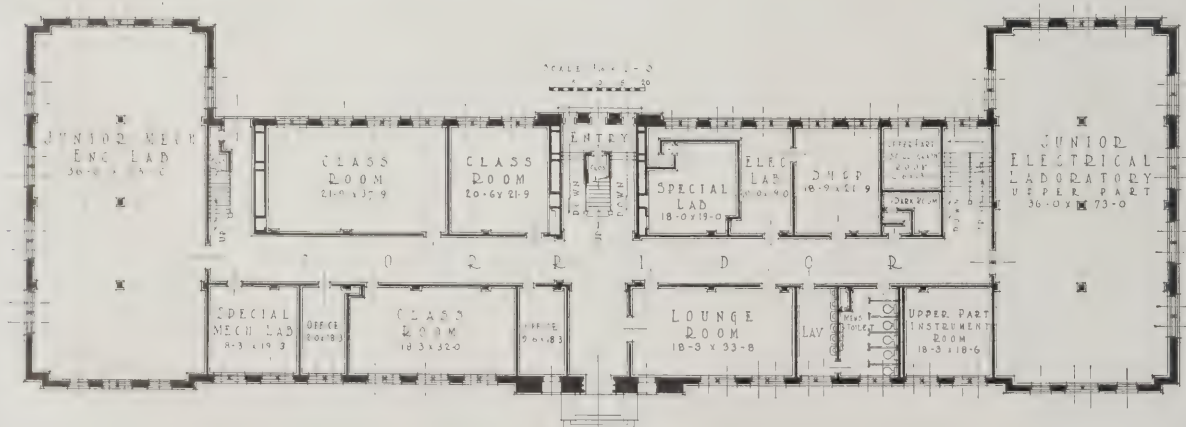
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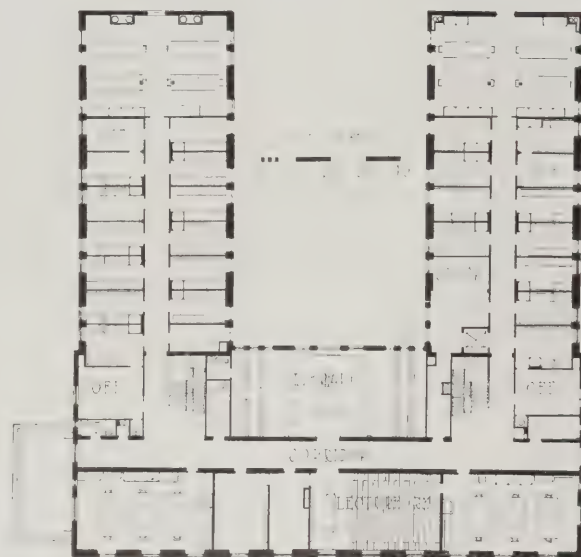
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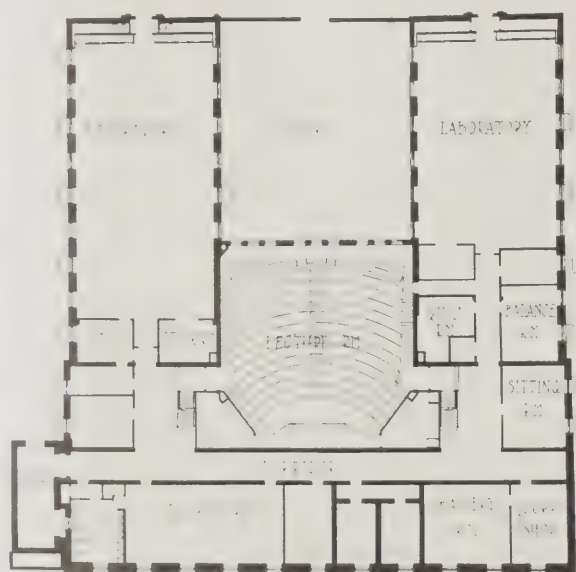
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CHEMICAL LABORATORY BUILDING, JOHNS HOPKINS UNIVERSITY, BALTIMORE
CARRERE & HASTINGS, ARCHITECTS; SHREVE, LAMB & BLAKE, ASSOCIATED

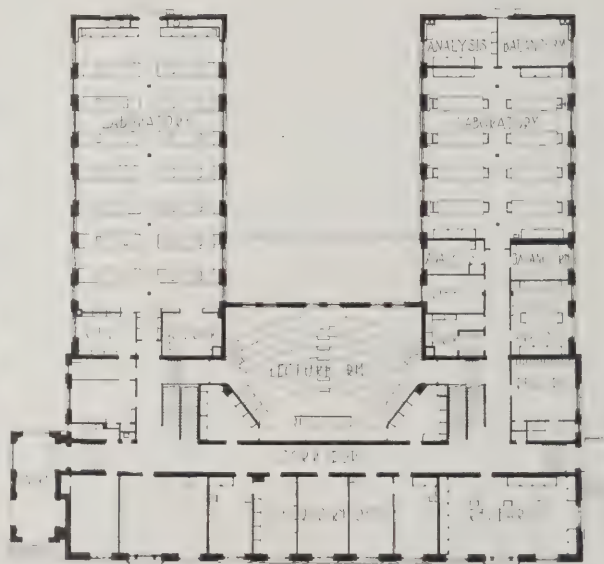
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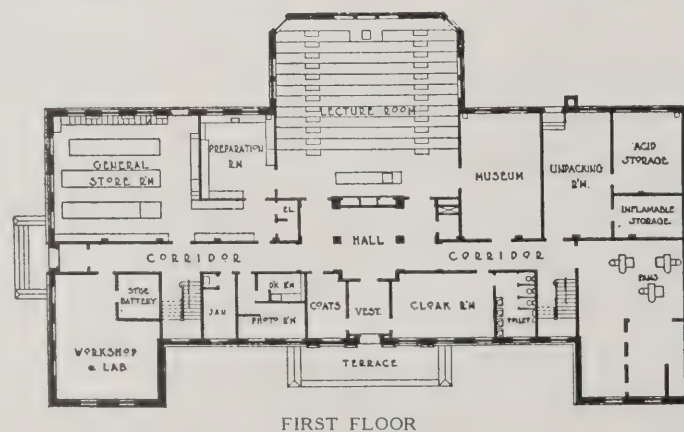
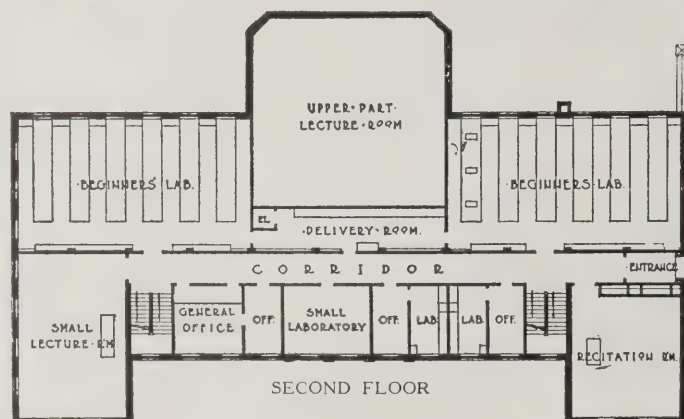
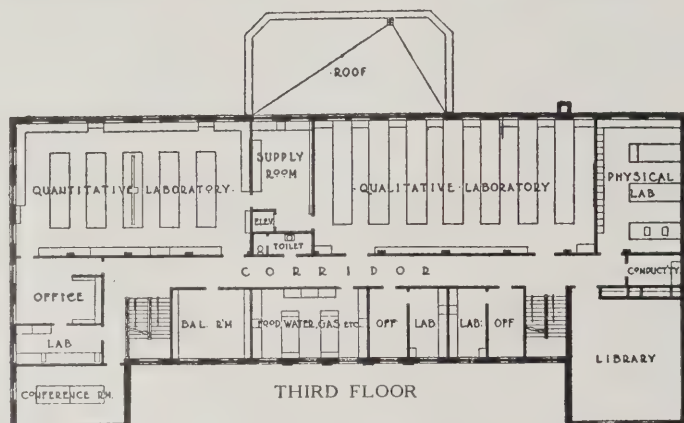
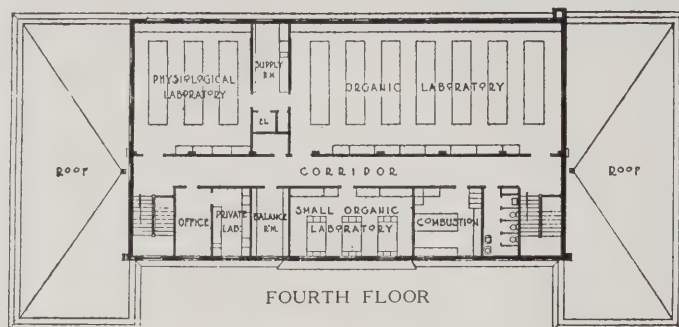
CARRERE & HASTINGS, ARCHITECTS
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STEEL CHEMISTRY BUILDING, DARTMOUTH COLLEGE, HANOVER, N. H.
LARSON & WELLS, ARCHITECTS



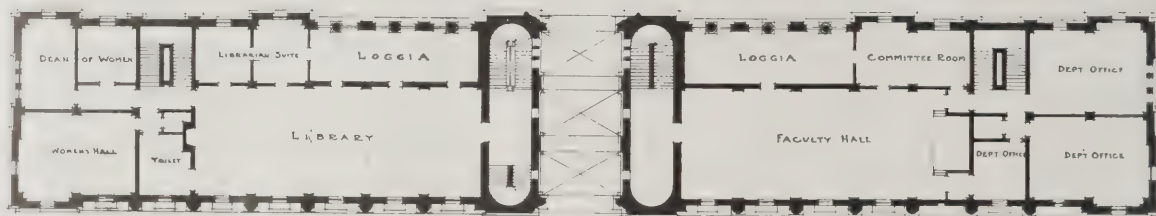
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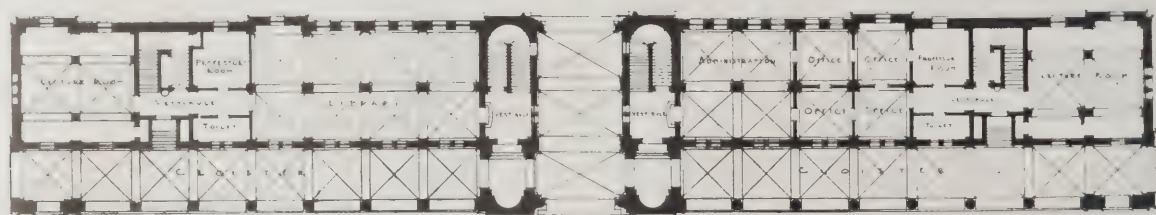
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GRAM & FERGUSON, ARCHITECTS; WILLIAM WARD WATKINS, ASSOCIATED

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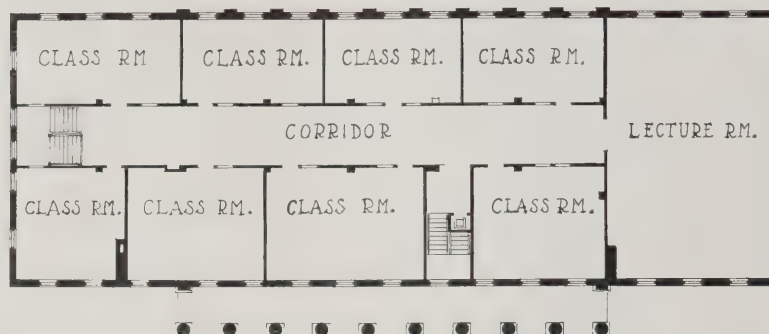
CRAM & FERGUSON, ARCHITECTS
WILLIAM WARD WATKIN, ASSOCIATED



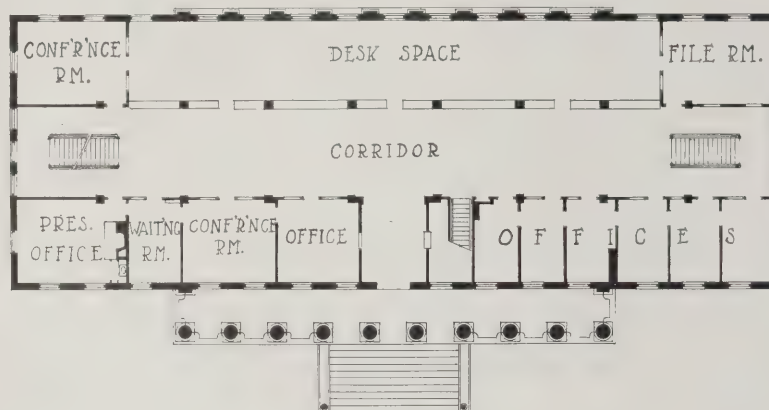
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McKIM, MEAD & WHITE, ARCHITECTS

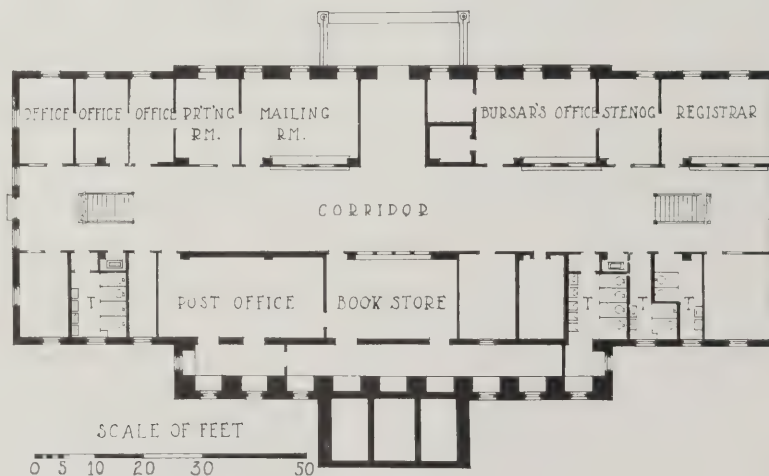
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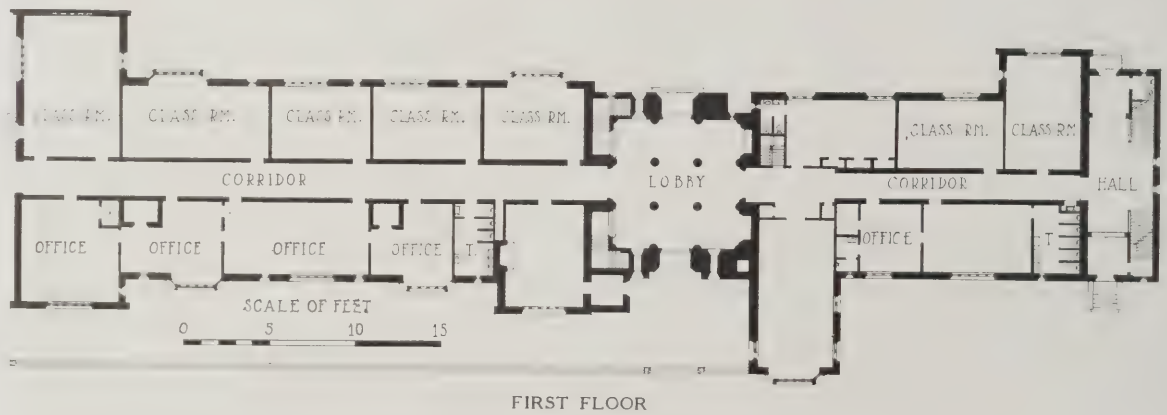
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H. C. HIBBS, ARCHITECT

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PLANS, ADMINISTRATION BUILDING, SOUTHWESTERN UNIVERSITY, MEMPHIS

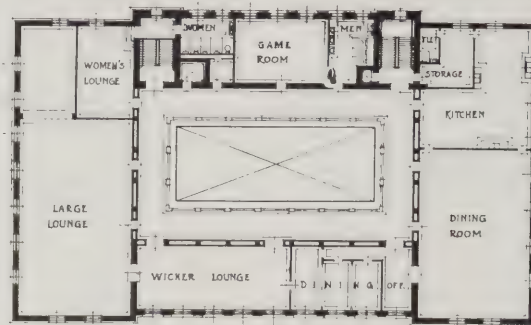
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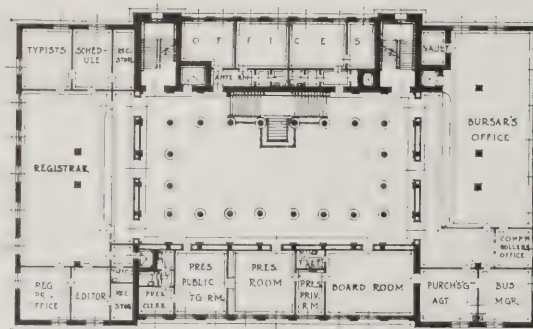
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J. N. BRADFORD, ARCHITECT

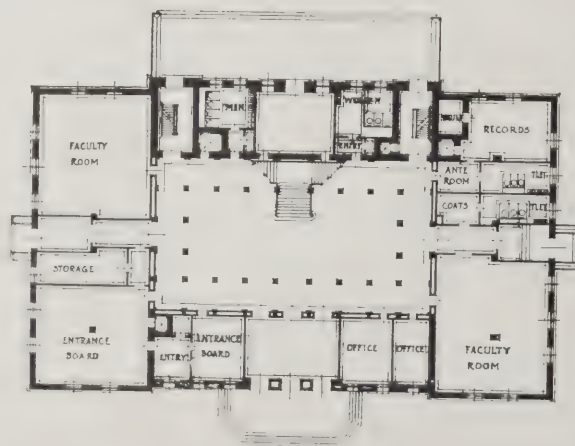
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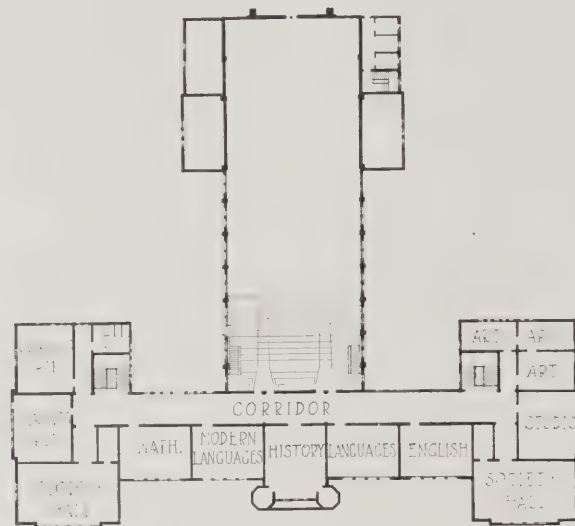
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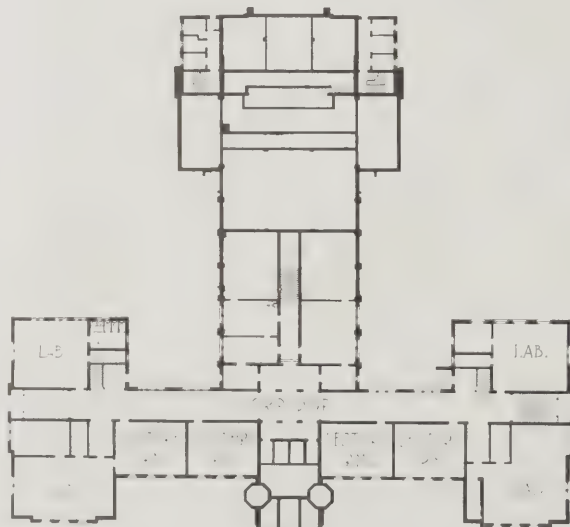
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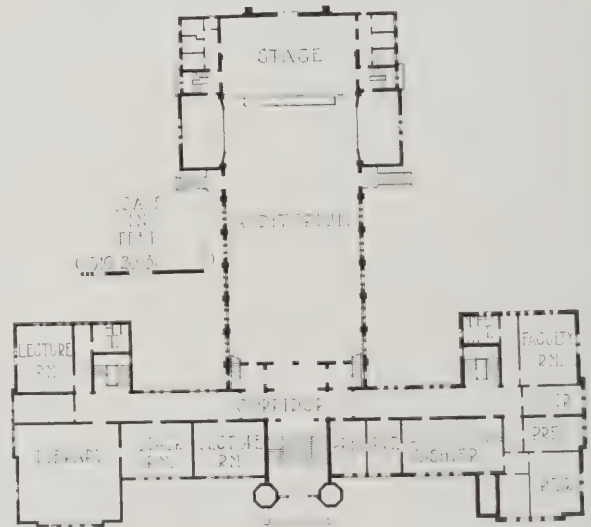
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BOOK DEPARTMENT

Some Recent Architecture in Holland

A Review by ROBERT L. AMES

AN American who follows present-day tendencies in the architecture of continental Europe may well be pardoned if he asks just whither European architecture is going; not the architecture of the British Isles, be it noted, for the British seem to be guided in their architecture (as in most else) by that solid, well grounded common sense or reliability which we are fond of supposing is held as a common heritage by the English-speaking nations. But let one but cross the Channel and begin to examine the recent architecture of almost any French city,—the newer buildings, residential perhaps, in almost any French town,—and one will be astonished, if not dismayed, to find there much which will cause the fear that the amazing showing of architecture, as well as of the other arts which contribute to architecture, which in Paris during part of 1925 astonished the world, was representative and symptomatic of the tendencies of European architecture as a whole, and not (as one had hoped) the result of a temporary architectural aberration, one outcome or a result no doubt of the shock engendered by the World War.

Americans are taught to regard Spain as the one really unspoiled country left in the world ("reactionary" is the word often used), and yet even in Spain the deadly pseudo-progress of architecture goes on apace, and lately there has been built in Spain's chief city an extremely costly religious edifice of such an amazing and advanced modernist type that one may well be pardoned for regarding it as a parody,—as the one supreme and structural perpetration of blasphemy. Modern Germany, of course, could not be expected to refrain from emulating what she saw being done all around her, but the Dutch, with their phlegmatic solidity, one might suppose to be more firmly rooted and grounded,—more amenable, perhaps, to the teachings of tradition, and less likely to be swept away by the desire for novelty which has caused such havoc elsewhere and which produces such dire results wherever its tendencies are being felt today.

Such, however, does not seem to be the case. This recent work on Dutch architecture presents evidence which proves that the difference between Holland's following of Europe's extreme architectural tendencies and the following of the same tendencies by other countries

is of degree rather than of kind, the result being that the work in Holland is less disturbing than that elsewhere,—only slightly less disturbing perhaps, for much of the recent work here illustrated might almost be attributed to certain of the most extreme and enterprising architectural radicals in other countries. As one turns the pages of the work, there are seen a few illustrations of buildings which suggest a certain inspiration,—proved by fine, severe lines attained along with what seem to be economical uses of material and labor. Some few other illustrations show structures which are at least inoffensive,—in some very rare instances even admirable,—but one closes the volume with (first) wonder whether the upheavals of the past decade or more have not affected architecture as well as everything else which concerns mankind, and (second) a



Radio Station, Kootwyk

An Illustration from "Dutch Architecture of the XXth Century"

feeling of thankfulness that (in America, at least) the movements of architecture are steadily onward and upward, and that our experiments, even though sometimes revolutionary, do not involve the wholesale destruction of what gains architecture has made during the last several hundred years. Perhaps, however, it might be well to refrain from adopting too complacent an attitude, since possibly our moderation is due partly to a certain timidity which Americans feel in pioneering into new and highly original expressions of what concerns art, and partly also to the unfortunate development which has come to what few innovations we have attempted in the past. This volume constitutes a valuable record of current European architectural tendencies.

DUTCH ARCHITECTURE of the XXTH CENTURY. Edited by J. P. Mieras and F. R. Yerbury. Text, and 100 Plates, 8½ x 11 ins. Price \$10. Charles Scribner's Sons, New York.

Any book reviewed may be obtained at published price from THE ARCHITECTURAL FORUM

HOUSE & GARDEN'S Second Book of Interiors

EVERY little while a new volume is added to the HOUSE & GARDEN series, which deals with houses, their exteriors and interiors, and their gardens. In this, the latest and by far the most helpful and stimulating of these volumes, there has been collected the very best of the invariably excellent matter which has appeared in HOUSE & GARDEN during the past year or two. It is a volume valuable alike to the architect, the interior decorator and the home owner, as well as to the large number of people casually interested in interior decoration.



SEVEN hundred illustrations deal with every department of the house,—entrance porches, vestibules and halls; reception and living rooms; libraries, dining rooms and kitchens; stairways; bedrooms and bathrooms; verandas and terraces, all these illustrations presenting the most perfectly planned and beautifully arranged examples, the greater part of which are of distinctly moderate cost. Other departments deal with color schemes of which a great many are suggested; with accessories, such as book-cases and built-in bookshelves; lamps and lamp shades; mirrors and other details of furnishing; and one section is given up to illustrations and text which make entirely plain the types of furniture of the different historic periods.

It would be impossible to over-emphasize the value of this work to anyone interested in its subject.

223 pages. 9¾ x 12¾ inches. Price \$5.

ROGERS & MANSON COMPANY
383 MADISON AVENUE, NEW YORK

THE OAK COLLECTOR. By MacIver Percival; 282 pp., 5 x 7½ ins. Price \$3. Dodd, Mead & Co., New York.

STUDENTS of furniture place high value upon furniture of what is sometimes called the "age of oak," which was the forerunner of the "age of walnut" and the "age of mahogany." Particularly in England, furniture of the oak period exhibited a charmingly rugged simplicity accompanied by grace which in the estimation of many renders it far more interesting and valuable than later furniture, which with its sophistication and ultra-refinement was the result of influence from without.

This excellent work on oak is by a widely known writer on furniture. As a manual to a collector it is invaluable, though it is equally so to a student who desires to learn of the historic periods. The illustrations are helpful, and an adequate glossary adds to the value of the volume by considerably increasing its usefulness.

ARCHITECTURE OF THE OLD SOUTH. By Ernest Ray Denmark. Text and 72 Plates. 9 x 11½ ins. Price \$2.50. The Southern Architect and Building News, Atlanta.

THE wealth and culture of the South produced noteworthy architecture during the latter part of the colonial era and up to the time of the Civil War. The traditions of the settlers of the states along the Atlantic seaboard,—Maryland, Virginia and the Carolinas,—led to use of architectural forms of the English Renaissance, while in Louisiana French and Spanish traditions resulted in use of forms largely Latin. The entire South embraced with fervor and enthusiasm the architectural forms of the Greek Revival when they appeared.

This work might be called a review in brief of the architecture of the South during this entire period. Many well known buildings are illustrated, such as "Shirley," "Westover" and the Bull-Pringle house at Charleston, but many also are the views, exterior or interior, of charming old structures which have hitherto somehow escaped exploitation. The buildings illustrated are not exclusively residential, for the volume includes quite a number of structures of a public nature, such as court houses, or of churches,—a type of building of which the South produced some notable examples which still exist.

ART STUDIES; Mediaeval, Renaissance and Modern. Editor in Chief, Arthur Kingsley Porter. Plates and 163 pp., 8¼ x 11¾ ins. Price \$7.50. Harvard University Press, Cambridge.

THE *American Journal of Archaeology* exists as one of the few highly critical of American publications. It is devoted chiefly to the recording of results of research in various fields which relate to art or to subjects more or less closely related to it, and among the editors of the publication or members of its staff there are many individuals well known for their scholarly attainments. "Art Studies," a beautifully produced volume, is described as "an extra number of the *American Journal of Archaeology* for 1925." It collects in book form a number of articles by eminent writers and research students. Georgiana Goddard King writes of the "Problem of the Duero," concerned with certain antiquarian studies of old churches and other ecclesiastical buildings in Spain. Raimond Van Marle contributes an illustrated essay on "Paintings of the Beginning of the Fourteenth Century at Montefiascone." Frank Jewett Mather, Jr. writes on "Two Attributions to Giotto," Ernst Steinmann on "An Unknown Pieta by Michelangelo," and Arthur Pope on "A Quantitative Theory of Aesthetic Values."

LIFE AND LETTERS OF THOMAS JEFFERSON. By Francis W. Hirst, 588 pp., 5½ x 8½ ins. \$6. The Macmillan Co., New York.

THE place in American history occupied by Thomas Jefferson is, of course, well defined and amply secure. One of that small group of men who would have been notable in any age, and notable indeed at a time when a few struggling colonies had but lately constituted themselves a nation, he aided by his counsel and efforts as a statesman in the stabilizing of American affairs, and served not only as Secretary of State and Governor of Virginia but also two terms as President of the United States before returning to the broad acres of his Virginia plantation, to devote what he described as his declining years to the tranquil life of a country gentleman.

The principal interest in this work to architects will be the chapter devoted to Jefferson's life after his retirement from participation in public affairs. Interested as any well bred American of his time would have been in architecture, his taste was developed and sharpened by his study when in France of French and Roman architecture, and made even keener by his visits to some of the great English country houses, their parks and gardens. The taste which guided this American Cincinnatus as an amateur architect may be judged from such of his work as yet remains,—notably that at Monticello and the University of Virginia, work of such excellence, beauty and architectural purity and accuracy that it remains after more than a century among the treasures of American architecture. Jefferson in addition to being far more than something of an architect was a landscape gardener. He planned his grounds just as he grouped his buildings with fine taste as to composition and with the same eye to carefully studied architectural effect which he devoted to the designing of Monticello's portico or to the Rotunda at Charlottesville. Other Virginia builders disfigured their sometimes fine country houses by crowding them with offices for the conducting of their plantations' business; Jefferson concealed these utilities, and tucked them away where they would be convenient and accessible but not obtrusive. A visiting French nobleman proclaimed him "the first American who consulted the fine arts to find out how to shelter himself from the weather."

SKETCHING IN LEAD PENCIL FOR ARCHITECTS AND OTHERS. By Jasper Salwey, Author of "The Art of Drawing in Lead Pencil," "Cornwall," etc. 174 pp. 5½ x 8½ ins. Price \$3. Charles Scribner's Sons, New York.

IN these days of photography made easy and of the use of "picture postcards" of everything which possesses anything of interest, one is often likely to overlook if not to minimize the claims of sketching. It is so easy, let us say, for the traveler to carry about with him a camera hung to a strap over his shoulder, and to snap in an instant whatever attracts his fancy instead of producing paper and pencil and devoting an hour or more to securing a sketch which in the end may not possess half the accuracy and fidelity to detail which has been secured by the camera. And yet sketching is an art and involves far more than what may appear to be occupation for a chance idle moment. Sketching successfully done involves the use of composition, of grouping of perspective, and of countless other details of draftsmanship, and it is important for the best development of almost any form of art and vitally necessary for many. For an architect skill in sketching is highly important,

FRENCH PROVINCIAL ARCHITECTURE

*A Constructive and Practical Work on
Minor French Buildings*

By PHILIP LIPPINCOTT GOODWIN
and HENRY OOTHOUT MILLIKEN



SOME of the most graceful and distinguished architecture in the world exists in French provincial towns, small villages and in tiny hamlets which cluster about the great chateaux—small manors, half-timber cottages, shops and buildings of other kinds. Much of this wealth of design is applicable to American use—the exteriors largely for suburban or country houses, and the interiors for residences or apartments. The authors, with unerring architectural taste and judgment, have selected just those details which possess proportions and suitability for present-day use. The volume contains illustrations, plans and measured drawings worth considerably more than the cost of the work.

*Text, 40 Plates of Measured Drawings
94 of Illustrations*

Size of Pages, 11 x 15 ins.
Price \$20

ROGERS & MANSON COMPANY
383 MADISON AVENUE NEW YORK

since it precedes the creation of almost anything in the way of architecture. A composition once fixed in the designer's mind must next be sketched or put into the "sketch plan" stage, and the preparation of perspectives and even of elevations of buildings, supposed by many to involve nothing more than drawing which is purely mechanical, demands rather more in the way of sketching than might be supposed. And, what is more, sketches serve to capture and fix compositions which have never had any actual, tangible existence whatever,—airy fabrics of imagination,—pavilions and palaces which have never existed except in the fertile and inventive mind of an artist, and yet possessed often of high actual value in the way of design. How fatuous to rely wholly upon the actual and methodical portrayal by the camera of only literal realities, when many things exist only in vision!

While Mr. Salwey's book may not have been prepared wholly with the requirements of the architectural sketcher in mind, it admirably covers the subject from the student's point of view. It is particularly helpful in defining the different techniques of drawing, some of which are better adapted than others to a given use. There are shown (by way of an object lesson) several "stages" of sketching, one illustration showing the barest fundamentals of form with merely sufficient data from which the draftsman probably developed the drawing shown a few pages farther on; thus there are Figures 10 and 11, "Almshouses near Edgware," in one of which are indicated merely beautifully disposed hip roofs and a Baroque gable, while the other indicates the finished charm of textured brick walls and tiled or slated roof surfaces.

ETCHERS AND ETCHING. By Joseph Pennell. Third Edition, 343 pp., 7¼ x 11¼ ins. \$10. The Macmillan Company, New York.

THERE are not many names more conspicuously identified with modern etching than that of Joseph Pennell,—and not only with modern etching but also with all the lore of past and present ages which supplies background for one who treasures the engravings, etchings and all the other products of what are sometimes termed the "graphic arts," the lore more than partly literary which has been accumulated during centuries, and which constitutes so much of the charm which invests the subject.

Mr. Pennell's writings on etchers and etchings and the technique of etching processes are very nearly as interesting as the plates in which his highly skilled hand drew the lines which portray the lace-like delicacy and fragility of the western front of Amiens or the airy pinnacles of various old buildings in Spain. His vividly written paragraphs create in the mind's eye the beauty of the old world or some few details in the new, and all but cause the objects to assume visible form. So too with his writings of the great etchers of days gone by,—of Rembrandt, Van Dyck, Turner and Whistler, or those of the more recent past or indeed of the present, the interest of this latter part marred more than a little by the marks of an obstinate intolerance,—an absolute certainty and firm conviction of being in the right when everyone else is in the wrong, or else of a sort of naïve vanity which clothes with an exaggerated importance various and sundry small and petty quarrels regarding which the reader knows little and cares less. Nevertheless, the work is a valuable contribution to the works upon etchings.

COLONIAL INTERIORS

Photographs and Measured Drawings of the Colonial and Early Federal Periods

By LEIGH FRENCH, Jr., A. I. A.

INTERIOR woodwork during the Colonial and early Federal periods was exactly what is demanded for "Colonial" interiors today. The character of workmanship in the colonies insured craftsmanship of excellent quality, and this, together with design carefully studied from the simpler contemporary English work, resulted in woodwork which it would be difficult to improve upon. For this reason close study is being made of such old American interiors as still exist, and measured drawings make possible the reproduction today of much of the finest woodwork of the seventeenth or eighteenth century. These forms, while they involve not a little subtlety in the details of design, demand merely the use of simple mechanical processes which are not beyond the skill of any reasonably proficient woodworker, sometimes of an ordinary carpenter.



IN this valuable work on the early American periods there are given illustrations from new photographs of interiors of the time, many of which are little known. These illustrations are of rooms of different kinds and of widely different types,—the early, somewhat severe type as well as that which was later and more refined and luxurious. Valuable illustrations are supplemented in many instances by invaluable working drawings,—details of wall paneling, mantels, over-mantels and fireplace surrounds; door and window trim; china closets; newels, balusters and other details of stairways, and designs for the

stenciling of floors, together with notes on the colors originally used. It is a volume which in its practical usefulness will be of great value to architects whose work involves much use of early American interior design.

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Howard Van Doren Shaw; 1869-1926

An Appreciation by IRVING K. POND

HOWARD VAN DOREN SHAW was born in Chicago on May 7, 1869, and he died in Baltimore on the night of May 6, 1926, where he had recently gone for medical treatment. Thus Howard Shaw was a comparatively young man, rounding out within a few hours a full 57 years—a period far short of the allotted three score years and ten. Fate had been fairly kind, for his was not an early struggle against odds, and he was able to apply as much time as might be necessary in preparation for his life's work. He chose wisely, and followed an academic course at Yale, receiving his B. A. in 1890. The succeeding three years he spent in the Architectural School of the Massachusetts Institute of Technology. In 1893 he married and began

his architectural career, starting in an office out of which had come a number of competent—not to say distinguished—architects, to which list his name in course of time added luster and increased prestige.

One of Howard Shaw's earliest architectural works was his own home in Chicago, in which he broke away from the prevailing conventional layout and fitted the plan to its surroundings. In general style the house was domestic English, but it was treated with a vigor and freshness, rare then in American adaptations, which showed that the designer was possessed of a fine sense of scale, a keen sense of fitness, and a freedom of thought which augured well for a brilliant future. How brilliant that future was is known to all who are acquainted with the real accomplishments of architecture in America. The charming and compelling quality of Shaw's design was noted not only by a large and influential clientele, which sought his assistance, but by his brothers in the profession, who, in the sad days of his last illness, little dreaming that the end was to come so soon, gladly bestowed upon him the Gold Medal of the American Institute of Architects,—the highest honor the Institute could confer.



The character of Howard Shaw's design, and his attitude toward architecture as a fine art, brought his name prominently before the Institute, and ultimately he might have been made its president if his physical condition had been sufficiently strong to bear the burdens of the office, which impose a severe strain, one which some incumbents have not been resilient enough to stand.

One of Howard Shaw's most saving graces was a delightful sense of humor upon which he could rely to smooth the rough path and to lighten the heavy load. The joyous spirit, accompanied by dry humor, which characterized his conversation, was apparent in much of his design, even in his more monumental work. He seemed to take the same calm, detached, attitude toward architec-

ture that he took toward life,—albeit his strong and gracious personality shone through them both.

A list of Howard Shaw's civic and social activities would indicate that in his death not only has his profession lost a brilliant architect and designer, but the community itself has lost a generous hearted giver and worker in all good causes. He gave not only of his means, with which he had been generously endowed, but of himself, in spite of the frailness of his constitution, and the physical suffering he was called upon to endure. It was a brave and indomitable spirit which kept him in the world for even the short period of years allotted to him; for Howard Shaw died young,—young in years and young in heart. He was a lover of men, of nature, and of art,—the art of creating beautiful things beautifully. Because of the love of these three great invaluable factors in the life of the spirit, he was able to create charming houses to shelter ideal homes, amid both the peacefulness of lovely landscape surroundings and the turmoil of city life. Howard Shaw has gone out of a home in which he was loving and loved,—out of a world which by word and deed and through his presence he was continually making more beautiful.

The Fifty-ninth A. I. A. Convention

By JOHN TAYLOR BOYD, JR.

THE fifty-ninth annual convention of the American Institute of Architects, held in Washington early in May, took action looking toward the immediate future of the profession. If the convention at New York a year ago, held in conjunction with the great exhibition of architecture, closed a brilliant record of more than a half-century of progress, marking nearly the entire growth of architecture today, this year's convention opened a new era in a spirit of determination to maintain that progress as far as possible. A great opportunity seems to beckon to the profession in the growth of this vast country, with its huge resources, and in the growing interest of its people, to make its environment more worthy, evidences of which abound.

President Waid's address struck the keynote of the occasion in pointing out the opportunity and the need for the greatest effort on the part of the profession to prepare itself for the task ahead in improving our cities, growing as they do too rapidly for their health; and he reviewed briefly the bearing of the different activities of the Institute on the future. He quoted the evidence of progress in the statistical fact that 32 per cent in number and 66 per cent in value of our buildings are designed by architects, and he called attention to the improvement in the planning of our towns, as well as to some of the difficulties of cities such as New York, which "is in serious trouble, and has problems to solve costing millions, which could have been avoided and with better results, if wise foresight and skilled guidance had been available." "Such facts," said Mr. Waid, "lead our thoughts along many lines in which the profession can be of ever-increasing service to society." The convention marked the end of President Waid's long and faithful service as an

officer of the Institute. No one has served it more loyally and more effectively, and the delegates regretted only that they had no higher office to bestow upon him. His years of service will never be forgotten.

But one sad note stood out from the brisk, business-like air of the assemblage. This was the death of a loved master-architect, Howard Van Doren Shaw of Chicago. Stricken with illness on the way to Washington, he was taken to a hospital in Baltimore where his condition became so grave that the convention hastened its approval of the award of the annual gold medal to him, he already having been selected by the Jury of Award for this distinguished honor, the highest in the gift of the Institute. The news of the award came to the architect in his last conscious moments, and his final words were "I am pleased." Never was an honor more fully deserved.

The inspiration of the events which comprised the convention's program was marked on the spirit of the gathering. They reconciled it to the long, hard grind of business necessary to arrive at decisions of policy affecting the organization of the Institute in certain ways. These decisions were concerned chiefly with problems arising from the newer activities and liaisons of the Institute which have developed chiefly since the war. Specifically, these were connected with the Committee of Public Information; *Journal of the Institute*; the Scientific Research Department, and its ally the Producers' Research Council; the Architects' Small House Service Bureau; the Allied Architects; and the development of the Octagon property at Washington, which is the headquarters of the Institute. These activities and interests needed consideration, some of them needed overhauling, and all required coördination with one another and with the Institute organization. Differences of opinion



The Fifty-ninth Convention Photographed

had arisen in the profession in regard to their value, and these differences were tending toward controversy. But everyone concerned in them was anxious to settle all weak points as far as is humanly possible, and all concerned "got together" in a fine spirit of coöperation. Indeed, they were settled with surprising ease and good nature, so much so that some even regretted that there was not enough excitement to keep the profession's pulse beating!

The questions arising from these activities were, nevertheless, fundamental, and it is worth while to understand them and their effects on the profession. What is the Institute for? What should it do? Has it resources enough, in both men and materials, to handle so many active undertakings? It was really the answer to these questions which determined the voice of the convention on these new subjects. President Waid's address shed light on the matter, and, following an ancient custom, the Board of Directors consulted an oracle.

They found it in the Institute's charter itself. "The object of this Society is to elevate the architectural profession as such, and to perfect its members practically and scientifically." So spoke the sibyl, and the Directors presented it to the convention in their admirable report. The convention evidently inter-

preted the words of the charter to mean an approval of all their activities, with certain warnings in view of the limitations of the resources of the Institute, which has less than 3000 members as compared with other professional societies, quite a number of which have very large memberships, such as the American

Medical Association, with its 90,000 physicians.

Since these questions have been much discussed in the profession, a brief mention of them here is desirable. As everyone knows, the *Journal of the Institute* has traveled a difficult path. The financial difficulty of carrying out its policy required attention, and a new board was appointed to work out a solution. The new board, with Lansing C. Holden as president, had thoroughly studied the problems. In coöperation with the Scientific Research Department and with others, the board adopted a new plan for the *Journal* which will soon be put into operation, which seems practical and suited to conditions as they have devel-

oped. Its character will be apparent in the *Journal* itself when the details are worked out. Since the matter of coöperation both with the *Journal* and with the Producers' Research Council was involved, the Scientific Research Department had been prevented from acting effectively until these questions were



Milton B. Medary, Jr.
Newly Elected President of the American Institute of Architects



at the White House with President Coolidge

settled, but, with the *Journal's* difficulties straightened out, its relations with the Scientific Research Department could be synchronized, and in turn, the Producers' Research Council, which coöperates, could proceed with its plans, producing the desired results.

The Architects' Small House Service Bureau question was settled by the convention after a short discussion, in which Robert D. Kohn ably presented, in a few words, the desirability of the Bureau's activities. He was effectively sustained by Mr. Kendall and Miss Manning of the Boston Chapter. The convention voted to approve the continuance of the Institute's control of the Bureau, and, later in the session, it also adopted an excellent resolution recommended by the Pittsburgh Chapter, which was designed to remove certain dangers in the situation. The Bureau itself is resolved to avoid these dangers, and is striving to further perfect its organization.

The important truth at the bottom of the questions concerning these activities is this:—they have had time to work out their problems, the Institute has approved them and has assisted them in adjusting their liaisons with one another and with the Institute itself, and the responsibility now rests largely on them to operate effectively. These activities have in general the good will of the profession, but there should be a clearer understanding among architects as to their aims and policies. They cannot be expected to secure the best results if they must contend with indifference and with misunderstanding. Those in charge of these activities believe they are helping fight the battles of the profession, and they feel that they should receive its sympathy and support.

The new program of the Committee on Public Information was also approved. It is a complex and difficult problem indeed, that of making the architect heard in the gigantic forum of today, which is our press,—to be heard, moreover, in a decent, dignified manner, amid all the clamor of press agent, of advertiser and of orator, a jargon of appeals and of slogans,—this is not an easy task. Much depends on the individual architect, on his work and his standing in his community. The Committee believes, however, that its modest proposal is not only sound under the circumstances, but will be effective. The whole idea of architectural publicity is not clearly grasped. When it is carried out on a proper basis, publicity in architecture is simply the public record of the aims and actions of the profession. It is a mistake to attempt to manufacture news out of things which are neither vital nor interesting to the public. Following out this principle, simple machinery has been designed to carry news from its various sources within the profession, through various channels to the outside world. These channels are both nationwide, for events of national importance, and local for local events. The local work is to be done chiefly by the local Institute Chapters. Perhaps the best part of the plan is that it gives full scope to the local initiative which is essential to vitality in any widespread organization. The greater the interest within

the profession in public spirited undertakings, the greater will be the public's response to the architect.

Another and most interesting detail relating to publicity was Harvey Wiley Corbett's request that the delegates should consider carefully the idea of using paid advertising as a method of publicity. Advertising was being discussed in some quarters, he said, and he wanted the convention to be informed of that fact. He appreciated the complexity of the subject of advertising, and he felt that it could hardly be decided at short notice. Nevertheless, he would like, if possible, to have some expression of opinion on the idea. A short but most enlightening discussion developed. By all means, let us have the subject threshed out. Let thought be provoked, and let discussion of it be thorough, for it may lead to interesting developments of advantage to the profession.

The matter of the Allied Architects Associations was passed over with a resolution requiring them to report to the Committee on Professional Practice.

Not the least interesting feature was discussion of the program for the building to be located on the rear of the Octagon property, designed to make the Octagon a real home for the Institute, with convention and exhibition hall, and offices for the permanent Institute organization. Mr. Waid showed lantern slides of the various sketches and schemes, and the whole program was approved by the delegates.

In addition to these programs and activities, which were acted upon by the convention, excellent progress was reported in other directions,—added work on the contract documents; on the competition code; on the archives and the preparation of a history of the Institute; on our most desirable and happy relations with foreign societies and bodies; on registration laws; on the preservation of historic monuments; on education. The work of the Committee on Education in stimulating interest in the fine arts in the universities and schools was particularly commendable. The Committee on Industrial relations called attention to the great value of the Building Congress movement in the building industry, and pointed to the need of improvement in technical details of architectural practice. There are still too many architects whose service can be improved on the technical and business sides. The report of the new Building Committee for Safety Against Earthquakes is significant of the extent of the Institute's activities.

The new officers of the American Institute of Architects elected at this convention are: President, Milton B. Medary of Philadelphia; First Vice-president, William Emerson, of the Architectural School, Massachusetts Institute of Technology, Boston; Second Vice-president, C. Herrick Hammond of Chicago; Secretary, C. Baldwin; Treasurer, Edwin Bergstrom. The new directors elected are Paul A. Davis, III; Dalton J. V. Snyder; A. H. Albertson; and George B. McDougall. The five former directors carried over are William J. Sayward, Nathaniel Gailard Walker, Goldwin Goldsmith, J. Monroe Hewlett and F. Ellis Jackson, whose terms have not expired.

THE EDITOR'S FORUM

HOUSING IN NEW YORK

A HIGHLY significant step toward the co-ordinated control of low cost housing is indicated by Governor Smith's approval of the Republican house bill. This bill now creates for New York state a Housing Board, which has broad powers to encourage the construction of well designed tenement buildings, to condemn and obliterate undesirable slums, and to regulate private companies which may be formed to operate on a semi-eleemosynary basis for the relief of congested housing conditions in the larger cities of the state. The approved bill permits the organization of privately financed housing companies earning limited dividends of 6 per cent, and gives the state Housing Board power to regulate rents and all operations of such concerns. The Board also has the power to enlist public aid to large tenement house projects through tax exemption, positive as to certain kinds of state taxes, and permissive in cases of local taxation. In addition to broad powers of regulation and control of the companies operating under this act, the Board has certain responsibilities of study and planning which should prove vitally important in relation to city planning, general housing development, and the elimination of slum conditions. The original bill proposed a state housing bank which could provide low cost financing for such projects, but this feature is not included in the approved bill which leaves all mortgage and equity financing to private enterprise.

The function of the architect in planning the proper type of low rental housing is recognized throughout this bill and by all parties interested. The real significance of the bill is that it constitutes the first real step toward making possible the wiping out of old unsanitary tenements and the prevention of bad planning in the future, encourages private capital to provide housing relief, and establishes good architecture as one of the primary essentials to good housing. It is confidently expected that with this action as a foundation, future sessions of the New York state legislature will increase the power of the Housing Board and continue to encourage better planning, having as its ultimate purpose the provision of a new type of low rental tenement house free from the evils of the past.

While it is too early to predict the tangible results of this bill, it is understood that several large loaning institutions are ready to provide financing for projects under the control of the new Housing Board, and that considerable philanthropic capital may logically be expected to turn into this form of controlled investment. Architects everywhere will do well to study this action of the New York state legis-

lature, because its application should have the effect of encouraging housing betterment in all of the larger cities, with a consequent recognition of the important functions of the architect in studying these problems and providing correct planning solutions. A complete description of the organization and powers of the new Housing Board will appear in an early issue of *THE ARCHITECTURAL FORUM*, and will indicate the important part which has been played by architects in proposing and encouraging this bill, together with a forecast of some of the definite results which may be expected in the near future.

GROWTH OF ACCIDENT PREVENTION

THE National Safety Council is a coöperative, non-profit-making organization composed of community safety councils, corporations and public spirited citizens interested in preventing accidents on the streets, in homes, and throughout industry. One of its recent bulletins presents what accident prevention experts believe is a record in the reduction of industrial accidents, announced lately by William M. Kinney, General Manager of the Portland Cement Association, with the statement that since 1920 the "safety first" activities carried on by his organization have reduced the number of accidents in portland cement mills 45.2 per cent, the number of days lost due to accidents 40 per cent, and the number of fatalities 33.3 per cent. "These records," explained Mr. Kinney, "apply to the whole industry, which employs more than 40,000 workers. Individual plants far exceeded these figures, however. Plant No. 8 of the Canada Cement Company at Port Colborne, Ont., and the Duluth plant of the Universal Portland Cement Company, each ran practically a year and a half without a single lost-time accident. Two men from each of these plants will be sent to the spring meeting of our Association in New York to receive the Portland Cement Association's trophy."

SUMMER COURSES AT CARNEGIE

THE Carnegie Institute of Technology makes announcement of its regular summer courses in architecture. Professor Camille E. Grapin, the distinguished French architect who is a member of the regular staff at Carnegie, it is also announced, will remain for the summer session to give the courses in Outdoor Sketching and Architectural Design. In addition to the courses to be given under the direction of Professor Grapin, the Department of Architecture will offer summer courses in Descriptive Geometry, Shades and Shadows, Perspective, and Trigonometry and Analytical Geometry. The courses are scheduled to last for six weeks, June 14 to July 24.

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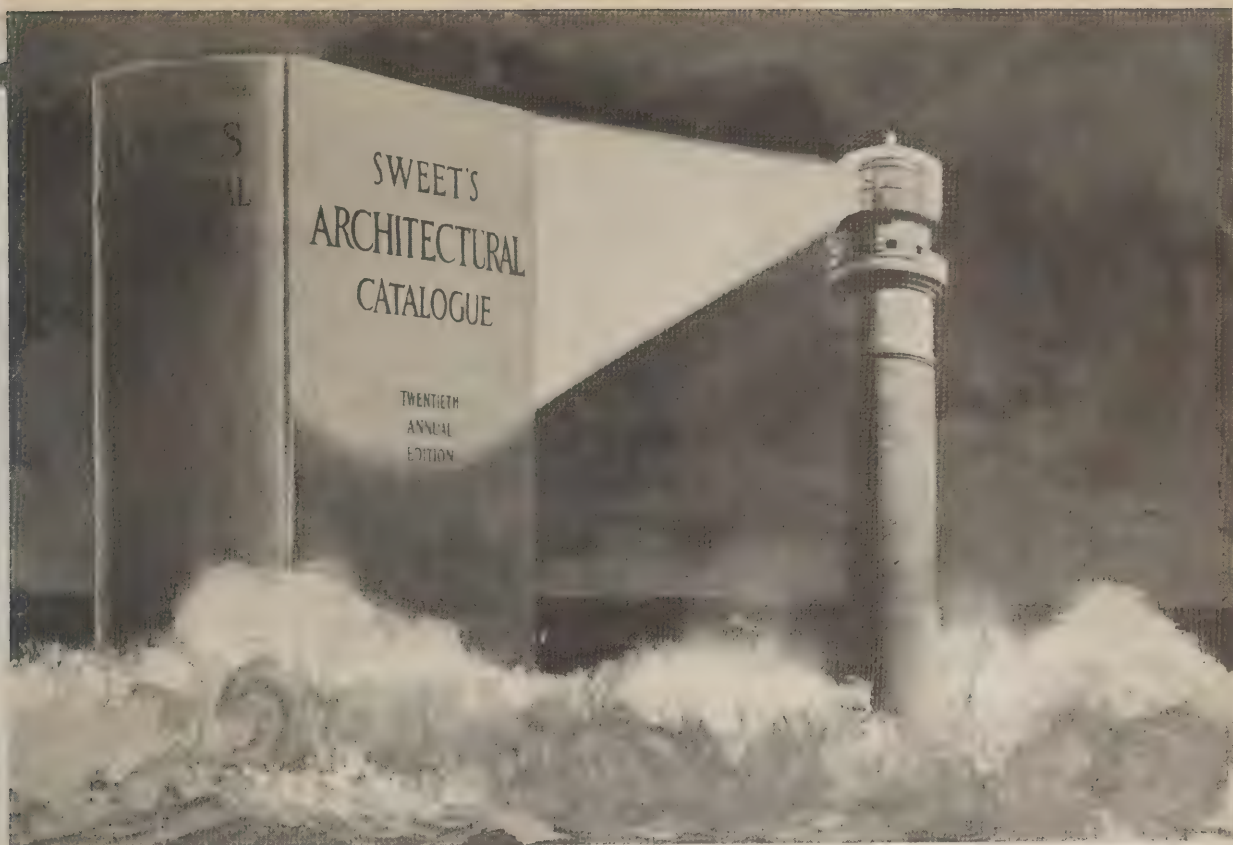
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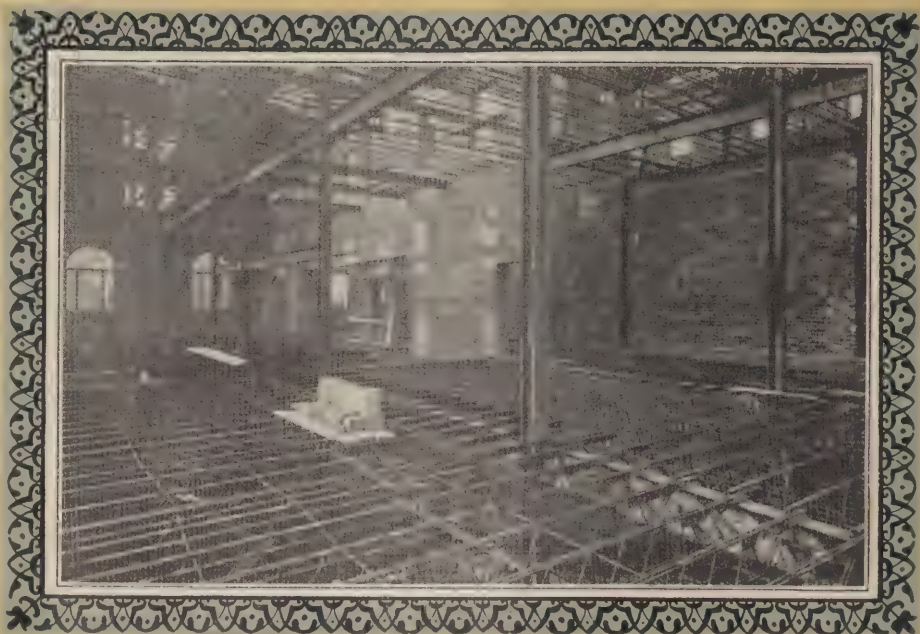
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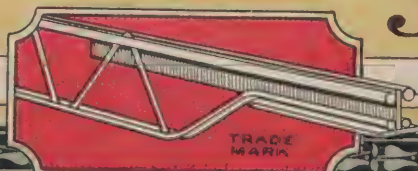
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